10245

AMERICA'S LARGEST TEXTILE MONTHLY

COTTON

Entered as second-class matter at the postoffice, Dalton, Ga., under Act of March 3, 1879.

Volume 90.
Number 6.
$1.00 a Year.

APRIL, 1926

Published monthly by
W. R. C. Smith Publishing Co.
Dalton and Atlanta, Ga.

They keep sales rolling
by LONG DISTANCE TELEPHONE

IN ATLANTA, GEORGIA, a wide-awake automobile concern worked out a follow-up telephone sales campaign. Telephone sales are assigned definitely to one employee and are his entire work. Fifteen days after the visit of each salesman this man gets the dealer on the telephone and solicits additional business. The telephone sales cost of this new business runs extremely low—often as low as one-half of one per cent on the total volume of new business secured!

BONDS AND BRICKS, ice cream and locomotives, matches and coal, groceries and flowers, textiles and real estate—these and dozens of other commodities are being bought and sold by long distance telephone. Long distance calls reach customers and prospective buyers who otherwise could not be reached so cheaply or promptly, if at all. They save the strength and health, as well as the time, of executives and salesmen. A long distance call covers hundreds or thousands of miles and *gets the answer* in a small fraction of the time and trouble required by any other means of communication.

Are you and your concern using your telephone arm with which to outreach distance for business? Are your executives in constant contact with their men and with important customers? Are you using the telephone on the principle of the heaping measure—to get new business at almost negligible expense—new business that otherwise would be lost?

The Commercial Department of your local Bell company will gladly study your business and lay out a program of long distance selling, buying or collections. In the meantime you can talk 400 or 4000 miles just like speaking across the street. What far-distant call would you like to make, now? . . . . . *Number, please?*

BELL LONG DISTANCE SERVICE

LIBRARY APR 20 1926 PERIODICAL

Table of Contents, Page 49. Buyers' Index, Page 186 Advertisers' Index, Page 198.

3 years ago, you couldn't get it at any price . . .

3 years ago you had to go to one source for your lithographic requirements—to an entirely different source (probably the Kaumagraph Company) for your trademark transfers.

What a nuisance it was—what an inconvenience!

So a little over a year ago, at the suggestion of many of our customers, the Kaumagraph Company established a lithographic department. And now many of our old customers are finding it a great convenience to get both their lithographic and transfer requirements from the same single source.

We wish you'd write us for actual samples of either service or both, for these photographs do justice to neither!

KAUMAGRAPH COMPANY
350-356 West 31st St., New York

Boston
Chicago
Philadelphia
Charlotte, N. C.
Paris, Ont.
Paris, Fr.

COTTON

Published Monthly by

W. R. C. Smith Publishing Co., Dalton and Atlanta, Ga.

L. L. ARNOLD, Editor. **R. W. PHILIP, Associate Editor.**

Editorial and Advertising Department, Grant Bldg., Atlanta, Ga. Subscription price, $1.00 per year; Canada, $1.50 a year; Foreign, $2.00 a year. Entered at the Dalton, Ga., postoffice as second-class matter.

Contributions to the columns of Cotton are solicited and paid for after publication. The names of contributors need not necessarily be used, but must accompany all manuscripts.

Orders for any change in advertising must reach Atlanta previous to the tenth of the month preceding month of issue, otherwise publishers cannot be responsible for changes.

When changing address, notify us, not the postmaster. Always give the old address as well as the new one.

Volume 90 **Member Associated Business Papers, Inc.** **Member Audit Bureau of Circulation.** **No. 6**

CONTENTS

Among Cotton's Readers 47

With the Publishers 51

Editorial—

A Move in a Dangerous Direction 519
Look to the Waterways 519
Encouraging Folk to Lose Money 520
Real Wages in the United States 520

General and Technical—

A Description of Long Draft Spinning 521
Scientific Trends With a Textile Slant 524
If + and + But 525
Warp Sizing 526
Textile Operating Executives of Georgia Meet at Atlanta 528
Towels and Toweling 535
What the Southern Mills Are Doing 538
The New England Mill Situation 540
Cotton Comment 542
Insulated Roofs 544
Notes About Men You Know or Know About 546
An Old Timer Says 549

How Other Men Manage—

The Value of Twist in Roving.....551
Opening and Picking Long Staple Cotton 551
Some Questions for Weavers 556
Contraction of Yarns in Spinning 556
A Home-Made Shafting Oiler 557
A Feed Roller Gauge for the Comber 559
A Comment on "Some Other Things" 561
Wants Rule for Figuring Reed, Etc. 563
Card Stripping 563
What's the Matter With This Spinning? 563
Using Hank Clocks to Pay for Spinning 565
Uneven Tension on Fly Frames 569
Some Spinning Room Notes 571
Applying Fillet to Stripping Rollers 581
Covering Cones to Reduce Uneven Tension 581
Flyer Lead and Bobbin Lead 583
Fluted Rolls and Breaking Strength 584
Slack Selvages on Warper Beams 584
A Fly-Frame Questionnaire 584

Knitting Section—

Standard F Makes Drop Stitches in the Gore 587
Overcoming Oil Spots 587
Some Causes for Holes and Rough Places 589
Preventing Corner Holes on R I Machines 589
Trouble With the Striper or Yarn Changer 591
A Device for Loosening Chains 591
Drop Stitches in the Looper Line 591
Why Does the Rayon Look Fuzzy? 593
Checking Production and Cost 593
Yarn Selection and Use 594
Long Loops With a Mock Seaming Attachment 597
Some Points on Plaiting 597
300-Needle Machine on Chiffon Hosiery 599
Holes Appearing After Peroxide Bleach 599
Among the Knitting Mills 601
The Yarn Market 604
The Knit Goods Market 607

How do you want it?

WE ARE prepared to deliver Celanese brand yarn, wound on beams, sized and tinted, ready for the loom. Whether or not you do your own winding, this special service is very important to you. Through it the sizing and warping operationts are eliminated, costs are appreciably lowered, and production is greatly accelerated.

We also furnish Celanese brand yarn on cops (5″, 6″ or 7″) or on skeins, sized and tinted or dyed.

For the convenience of the knitting trade Celanese brand yarn is now delivered not only in skeins and on 2-ounce paper cops, but also on cones which contain approximately 1½ pounds net.

Our dyeing and textile experts are at your service, always ready to help you use Celanese brand yarn to your profit

CELANESE

REG. U.S. PAT. OFF.
BRAND YARNS

The AMERICAN CELLULOSE & CHEMICAL MANUFACTURING COMPANY, *Ltd*

15 EAST 26TH STREET, NEW YORK

WORKS AT AMCELLE (NEAR CUMBERLAND) MARYLAND

SOUTHERN REPRESENTATIVE: TODD B. MEISENHEIMER
ROOM 1116, JOHNSTON BUILDING, CHARLOTTE, N. C.

CELANESE is the registered trademark, in the United States, of The American Cellulose & Chemical Manufacturing Company, Ltd., to designate its brand of yarns, fabrics, garments, etc.

April, Nineteen-Twenty-Six

A Move in a Dangerous Direction.

It is difficult to argue against a proposal that in itself alone is not patently objectionable. If a Federal Department of Education should heighten the "dignity" of teaching—as it might—and have no power to interfere with the schools, one naturally would be inclined to favor its establishment. Teaching certainly is as important as many things which now have representation in the President's cabinet. In fact, it may be too important for such representation to be desirable or safe.

While it is hard to argue against a Federal Department of Education without power, it is difficult to understand how such an enterprise would be an improvement on the present excellent bureau which handles the same subject and in the same way outlined for the proposed department. A department of cabinet rank necessarily would be directed by a person who would be something of a politician; for members of the cabinet must advise and assist the President with regard to many matters other than those in their own portfolios. The chief of a bureau may be as aloof from politics as the head of a college, and this generally has been true of the ones who have directed the Bureau of Education in Washington.

But if it were certain that a department never would be more than an expansion of the bureau, its establishment still might be justified. That, however, is by no means certain. If it were, there probably would be very little demand on the part even of its proponents for a Federal Department of Education. The establishment of the department in all probability would be only a step towards the nationalization of the public schools—and nothing more unfortunate could occur. Immediately the proponents would renew their demand for Federal aid for the schools, and Federal aid will lead to Federal meddling with the operation of the schools, and quite probably to Federal control. And this is the worst thing that could happen to the schools, if not the country.

At first thought, a national system of public schools may seem desirable. No doubt such would bring about more uniform practice, longer terms in many communities, and better pay for teachers in the poorer sections of the country. The schools, however, would be improved in only the mechanical sense. Studies show that the closer the management, even the support, of the schools is to its patrons the better the education that is provided by it. Those schools which receive least state government support rank, as a rule, much higher than those that are under systems of highly centralized support and control.

Federal Government meddling with the schools will be provocative of abuses and dangers that extend much further than the school room. Germany, for example, made its schools a virtual branch of its war promotion department.

Look to the Waterways.

It generally is agreed that no more railroads of consequence will be built in this country. Abandoned railway mileage now about equals new construction, which latter is only for meeting exceptional conditions.

While rail transportation will grow, the growth there will not correspond as in the past with the gross need and use of transportation facilities. The public roads, now widely adapted to the use of trucks, are taking over more and more carrying that formerly was done by the railroads. Even some of the railroads are supplanting box and passenger cars with trucks and busses, just as the street railways are putting on bus services instead of extending electric lines.

It is an historical truism, however, that virtually no mechanism is ever displaced by another. Devices that make basic changes in practices supplement more than they supplant. Good highways make more hauling for than they take away from the railroads, which undoubtedly will continue to be essential. The motor truck will never take the box car's place in long-distance carrying. And present railway facilities are not and never will be as a whole fully adequate. They must be supplemented by something other than the motor vehicle.

Transportation by water lagged during the period of railway development. Unfortunately, our railroads evolved antagonistically to the river steamboat and barge instead of harmoniously, as in Germany. This accounts largely for our complex rate structure, notably in the South. It might have been different and better if the railroads had been permitted to take over water-carrying facilities and operate them as adjuncts. That certainly would have been better than the cessation of water-carrying development which took place.

With the building of new railroads curbed by a combination of economic factors, the restoration and exploitation of water-borne carrying is becoming vitally necessary. We have the biggest natural system of waterways with which

any country is blessed. There are thousands of miles of navigable rivers, piercing productive regions, on which craft bigger than fishing boats rarely is seen. Millions of dollars of public funds, redolent of the "pork barrel," have been spent on them to the satisfaction of little more than community pride and cupidity.

The time is now at hand when something can be done with the inland waterways. This is illustrated by what is being done with the Panama Canal in handling transcontinental freight. Ordinary goods can be transported via intercoastal vessels plying between the Atlantic and Pacific coasts almost as quickly and much more cheaply than by railroads across the continent. Intercoastal shipping made possible by the canal is one of the biggest national developments of recent years. The railroads haven't suffered notably from the loss due to the deflection of shipping to steam vessels plying this virtually new trade. And they will miss it less and less as the burden of transportation which cannot be deflected increases with the growth of the country.

Inland waterways offer opportunities for even more ponderable developments than that of intercoastal trade via the canal. The day will come when ocean-going vessels of large size will operate regularly from the Great Lakes to foreign ports. Government experts estimate that the Mississippi and its tributary rivers can be developed into a 9,000-mile consolidated system of navigable waterways, "through which twenty States could find cheaper transportation for their import and export raw materials and much advantage in interior distribution."

Small ocean-going vessels now can reach the Great Lakes through the Welland canal from the Atlantic, and a large volume of freight moves by barge from the lakes southward to the Atlantic via the Erie canal. The Saint Lawrence river development in Canada, if ever undertaken, and completed, will make the Great Lake ports truly foreign ones.

There also are big possibilities in streams that do not tie in with the vast Great Lakes and Mississippi systems of inland waterways. These should be viewed no longer as mere pretexts for getting appropriations for local expenditure from Congress. The time is approaching when their use in a big way will be essential; the time is here when their use would be highly economic and profitable.

Encouraging Folk to Lose Money.

The tax act passed by the present Congress is undoubtedly the best one of its kind that has been produced in many years. The Federal inheritance tax probably should have been abandoned, as the Senate decreed. There are quite serious objections to its being retained, as was finally done, as a coercive measure. This form of taxation should be left wholly to the States—to be employed or not, as they will. The only justification of a Federal inheritance tax is the probable need of a better distribution of large fortunes earned from operations in more than one State. But as retained by Congress, this form of taxation can achieve only slightly in that respect. Its aim is to force the States to levy similar taxes. When the next Congress reviews the subject, more knowledge on this exquisitely intricate problem will be available.

The repeal of the capital stock tax, as levied separately from the income tax, was a wise move from the administrative point of view. While successful corporations must pay the tax in the form of an increased contribution from income, the change removes the bother of making double returns on different bases.

However, a subtle and possibly important principle may be involved in the change, no matter how justified it is on grounds of expediency. Taxes trend more and more towards concentrating on success. The person or firm that is unsuccessful gets the benefits of Government just as much as does the one that succeeds. While in the end all taxes must necessarily come from earnings, it hardly is proper for taxes to lend encouragement to losses. And that is what the income taxes on corporations probably do.

The capital stock tax did not take immediate cognizance of earnings, as does the income tax. The latter, being uniform and calculable, is essentially an excise tax on profits. With respect to this tax, the well-managed corporation is more a tax collector than a payer. But if the badly-managed one collects the tax and then loses it there is no recovery. Succintly, the tax margin may sometimes be provocative of a recklessness which otherwise might not be indulged in.

Real Wages in the United States.

A capable economist, after assimilating all the data, announced that for the country as a whole real wages in the United States are about 28 per cent higher than in 1890. The finding should be a sound one, for during the period covered data in detail on the subject have been gathered regularly by the United States Bureau of Labor Statistics.

What the finding means is that the average workingman can now buy around 30 per cent more of necessaries, luxuries and comforts with his earnings than he could 35 years ago. Moreover, his present earnings represent a considerably less expenditure of time, which owes to the shortening of the work-day or week.

The International Labor Office has made similar findings as to comparative real wages in this country and abroad. In these the food buying power of wages in London is treated as the base, or 100. On this basis the buying power of wages in Philadelphia in October, 1925, was 189, or nearly double the London average. In most foreign cities the average was below that of London. The lowest figure, only 36, was recorded for Lisbon, Portugal. Outside the United States the highest figures are for Ottawa, 169; Sydney, 142, and Copenhagen, 117.

Most of the increase in the buying power of wages in this country, says the American economist, has taken place since the war, and owes principally to the fact that wages have not declined proportionately with prices.

While he doesn't go into that phase of it, he no doubt would find that very little of the increase owes to arbitrary measures for forcing wages upward. It owes, basically, to increased production per man, which in turn owes to the improvement of processes, chiefly the amplification of the machine factor in production, and other economies attributable in the main to management.

Some one has said that the greatest handicap to progress is waste energy. Speed up inefficient employees fifty per cent and a business will increase in the same ratio—if the product is right.

A Description of Long Draft Spinning

BY CARL R. HARRIS, CHAIRMAN SPINNING DIVISION, SOUTHERN TEXTILE ASSOCIATION, AND ROBERT W. PHILIP, ASSOCIATE EDITOR OF COTTON.

Interest in the subject of long draft spinning on the part of American mill men has received a material impetus recently as a result of the installation in the Victor-Monaghan Company in the South, and the Wamsutta Mills in New Bedford, of the "Casablancas" system of high drafting for cotton spinning.

The system has been in more or less general use in Spain, Italy, Germany and other foreign countries. Some months ago, A. H. Cottingham, general manager, Victor-Monaghan Company, Greenville, S. C., in company with Arthur E. Emery, agent, Wamsutta Mills, made a tour of mills on the continent, investigating several processes of long draft spinning. As a result, the "Casablancas" process is being installed in the mills mentioned. At the present writing, the Victor-Monaghan Company have 12 frames in operation at the Monaghan plant, a similar number at the Apalache plant in Greer; the Piedmont Manufacturing Company, Piedmont, S. C., is installing the equipment also.

Through the courtesy of Mr. Cottingham, the writers were privileged to inspect the system as it is in operation at the Monaghan plant at Greenville, and this article is written with a view of describing for Cotton's readers this development in cotton spinning.

Among the points made in favor of the high draft method of spinning is that it permits an unusually long drafting on the spinning frame, reducing the amount of drafting necessary on the fly frames, and usually allowing the elimination of one process of roving. Furthermore, due to the arrangement of the drafting principle, a wider range of fibers can be taken care of, no change in roll settings due to different length staples being necessary. These points will be explained more fully in succeeding paragraphs.

The most striking feature of the apparatus is undoubtedly its simplicity of operation. The revelation to the mill man examining it for the first time is the fact that it involves no complicated features or intricate design. This will be evident to the practical mill man upon a study of the accompanying line drawing, Fig. 1, in which the various features of the system are shown, as explained in the following paragraphs.

No change is made in the top and bottom back rollers, or in the top and bottom front rollers, *H* and *I*. The system consists essentially of two endless calfskin tapes or cots, *A;* a brass cradle, *B*, which guides the tapes and rests in the middle rollers, designated as *C* and *D;* and a rod, *E*, which holds, guides and cleans the lower tape or cot, giving stability to the apparatus and exactness to the distance separating the front rolls, *H* and *I*, from the delivery nip of the tapes or cots.

Aside from the use of the traveling cots or tapes, the main change made to convert the frame to long draft system is in the alteration of the middle rolls. The top middle roll, *D*, is changed in order to accomodate the top cot, and at the same time this roll, worked in the cap bar, as in the old system of spinning, holds the cradle, *B*, in place. The bottom middle roll is replaced by a roll, *C*, which has straight saw-tooth flutes, and which is driven in the usual manner from the machine gearing, and which drives the lower tape through the grip exerted by the flutes on the surface of the roll *C*. The upper tape or cot revolves from the friction with the lower cot by means of pressure from the saddle.

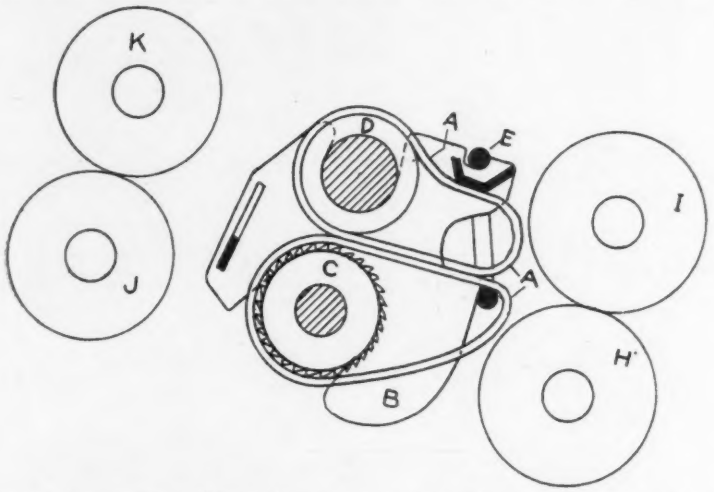


Fig. 1. This shows principle of "Casablancas" long-draft spinning. The usual back rollers, J and K, and front rollers, H and I, are used. B is the brass cradle which holds middle rolls and traveling cots. At A are shown traveling calf-skin cots, driven by fluted bottom middle roll C, which receives roving from back rolls and delivers it to front rolls. E is a rod which holds and cleans the lower tape.

Weighting of the top rolls is secured by the use of the usual system of weights, saddles and stirrups, working in the customary manner, and exerting weight on the front and back rolls in the usual way, and producing a pressure on the middle roll sufficient to cause it to revolve from contact with the positively driven lower tape or cot.

The regular under-clearer for the bottom front roll is used in the usual way, while for the top front roll, the revolving type of clearer is recommended; and in the Monaghan installation, it has proven satisfactory in every way to dispense with the use of the top clearer boards.

The diameter of the fluted bottom middle roll is 7/8 inch, and the top middle roll, which acts as a carrier for the top tape, measures 3/4 inch in diameter. The tape is 1 1/8 inch wide.

From the foregoing description it will be readily seen that the adaptability and simplicity of the system constitute attractive features insofar as the mechanical application of it to the frame is concerned; as it represents more of a "change-over" proposition on existing frames than a completely revolutionary and radical departure from present methods of drafting—which seems to be the common impression of "long-draft" spinning among those who have not inspected an installation of the system.

With the mechanical features thus described, we shall next outline the operation. The roving first enters the back rolls, *J* and *K*, as in the usual system of roll drafting,

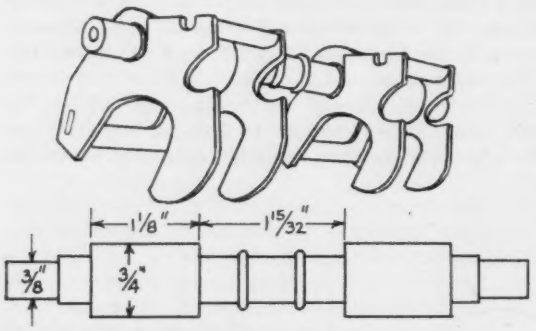


Fig. 2.
The cradle marked B in Fig. 1 is shown here in perspective, with top middle roller in position. This top middle roller is shown below the cradle, with the major dimensions indicated. This roll rests in the slot in the regular cap bar in the usual manner.

and is at once delivered by them to the leather tapes or cots, *A*. Practically the same draft is produced here that is found in ordinary spinning.

The distance from the center of the middle rolls to the center of the front rolls, in the "Casablancas" system, is 1 9/16 inches, compared with the customary 1 1/16 inch above staple in the regular process. Herein lies the fundamental reason for the development of this system. With this distance of 1 9/16 inches, the tapes, exerting a soft but effective pressure upon the fibers in the roving, carry it very near the bite of the front rollers. The practical spinner will recognize the point here, since at various discussions the point has been brought out "to set the rolls as close as possible without getting cockled yarn."

The practical mill man knows that, with the variation existing in staple cotton, if he sets close enough to take care of the short fibers, he is going to break the long fibers or produce cockled yarn. Therefore, he sets wide enough apart to prevent breaking the long fibers or cause cockled yarn. This in turn gives him no control over the shorter fibers which are suspended between the middle and front roll.

In the long draft principle, as stated, the tapes carry the fibers very nearly up to the bite of the front roll. These cots are so close to the bite of the front roll that the front roll picks up each individual fiber before it is turned loose by the cots. Consequently, it might be said that virtually all of the draft is produced between the delivery end of the cots and the front roll. It can readily be seen that this has many advantages, in that virtually every fiber is picked up by the front roll in order.

On the contrary, in the old system, as we all know, setting a greater distance than the length of the longest staple or fibers in order to avoid the difficulties mentioned, the middle roll has turned loose the fibers before they are picked up by the front roll. In this way, those fibers which are suspended in between the two rolls are likely to adhere to those fibers which are being held by the middle roll, or they may have a stronger adherence with the fibers which have been caught by the front roll. This being the case, it can readily be seen that in one instance they may be jerked forward and in the other instance they may be held back, consequently uneven work to a certain extent is bound to result.

Against a customary draft of from 8 to 12 on regular spinning, a draft of 20 on the spinning frame is a conservative estimate of the possibilities of the "long-draft" system. Mr. Cottingham furinshed the writers with bobbins of yarn produced on the "Casablancas" system of drafting. On the yarn produced on the regular frames, eight tests showed an average size of 28.57s and an average breaking strength of 54.4 pounds. The percentage of variation from

Comparative Tests of Yarn Spun with the Regular System of Spinning, using 5.60-hank double roving, and Yarn Spun with "Casablancas" system, using 1.50-hank single roving. Produced in same room.

REGULAR YARN			
Breaking strength	Weight in grains	Size of yarn	Extreme variation from average
57	36	27.78	
62	36.7	27.25	4.62% below (1.32)
55	34.7	28.82	
49½	36	27.78	
58	36	27.78	
50½	35.2	28.41	
53	33.3	30.03	5.11% above (1.46)
50½	33.8	29.59	
av. 54.4	35	28.57	9.73%

CASABLANCAS YARN			
Breaking strength	Weight in grains	Size of yarn	Extreme variation from average
51½	34.5	28.99	
53	35	28.57	
50½	34	29.41	
55½	35.5	28.17	3.36 below (.98)
52	34	29.41	
56	34.5	28.99	
54	34	29.41	.89% above (.26)
53	35	28.57	
av. 53.1	34.3	29.15	4.25%

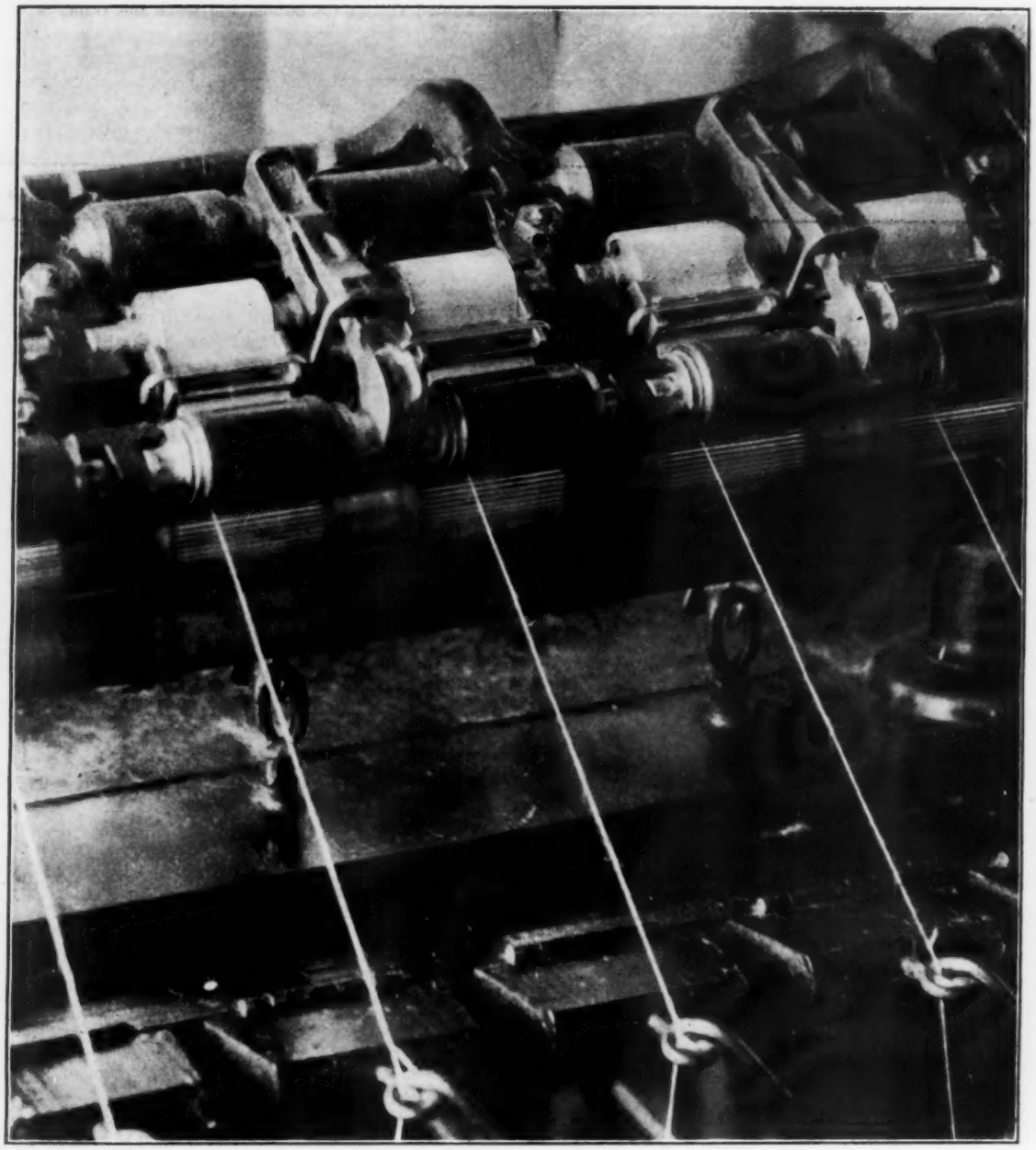
These tests were made of 120-yard skeins, broken on an automatic power-driven testing machine, all under same conditions.

the average proved to be 4.62 per cent below and 5.11 per cent above, or a total variation from high to low of 9.73 per cent.

On the yarn produced by the "Casablancas" system, eight tests showed an average of 29.15s, with an average breaking strength of 53.1 pounds. The variation below average proved to be 3.36 per cent, and .89 per cent above the average, or a total variation from high to low of 4.25 per cent. These tests printed elsewhere in full, show the different breaking strength and weights as found.

It will be seen that the yarn from the "Casablancas" system broke 1.3 pounds weaker on the average. However, this yarn was .58 of a number lighter, which would virtually outbalance the difference in the breaking strength. The most striking feature of these tests was the fact that the yarn produced on the "Casablancas" system proved to have less than one-half the variation found in the yarn produced on the regular system. This is hard to believe, considering the fact that the yarn on the "Casablancas" system was being produced from 1.50-hank single roving, while on the regular work it was being produced from 5.70-hank double roving.

At the Monaghan plant, Mr. Cottingham told us, 30s carded yarn is being produced from 1.50 single hank roving. At another Victor-Monaghan plant, 50s are being



A Close-Up View of Two Units.

made from a 2.50-hank single roving, with a front roll speed of 124 r.p.m., .8 times square root twist in the roving, and approximately a 3.00 twist multiple in the yarn. Report that the long-draft system produces a yarn with more of a "hairy" appearance was not borne out in the examinations made by the writers.

The advantages in favor of the "long-draft" principle of spinning, where practically applied—the results of being able to draft 20 and more on the spinning frame—will be apparent to the experienced mill man. In mills making finer yarns, the elimination of the second intermediate and jack frames, and in the mill more common at present in the South, the elimination of the speeders, is possible, according to the experience of the Victor-Monaghan Company. The use of single roving in the finer numbers is made possible.

From the mechanical construction of the system, it will be seen that no adjustments or changes in the roll settings are made to provide for different lengths of fibers. According to Mr. Cottingham's experience, a roving of cotton containing fibers ranging from 3/4 inch to 1 1/4 inch can be run through this system very successfully. In one of the mills visited on the Continent, he said, he saw a mix of one bale of long staple strips, one of strict middling American cotton, two bales of Brazilian cotton, and eight bales of Indian cotton being spun with the "Casablancas" system.

At another plant, dyed Indian cotton was being run successfully.

Inquiries have been received as to the length of life of the calf-skin cot used in this system—this being the only feature that it would seem wear would affect. According to Mr. Cottingham's investigation on this point during his tour of inspection, the users of the system estimate the life of these cots to be from six to eight years each. This seems plausible, as there is no severe friction on the cots; even though they are loose and flexible, no great amount of pressure is exerted upon them at any point.

A natural question for the practical mill man to ask would be how the cots on the bottom middle roll are replaced if they should come loose or break for any cause. This feature, as explained by Mr. Cottingham, is taken care of by a simple arrangement designed to cement the cot around the middle bottom roll while the frame is in operation. This process of replacing a cot on the bottom roll requires not more than a few minutes at the most.

The possibilties of the system in individual instances is a matter for individual investigation and calculation. This article's purpose has been to present a brief explanation of its operation; and to report facts gained from an investigation of the first southern installation.

American rights for the system have been purchased and will be handled by the American Casablanca Corporation, which is owned by the following Corporations and individuals: Victor-Monaghan Company, Greenville S. C.; Piedmont Manufacturing Company, Piedmont, S. C.; Wamsutta Mills, New Bedford, Mass.; Ricardo Miret, New York City, and S. K. Everett, New York City. Offices have been opened at 12 Pearl street, Boston, Mass.

Scientific Trends With a Textile Slant

In the year 1926 it is easier than ever before for us to believe that anything that we desire can be made by a machine. When radio pictures are confidently assured us, it will not do to question lesser feats. However, few industries are as highly fortified with the background for assuring results as is the radio industry. Textiles, particularly cotton, will have to build the framework before they can realize the structure.

A "machine that almost thinks" is far more than "a clever invention"—and the composite state of affairs called a *process machine* is a more superior thing than a mere combination of chemical actions within a conglomeration of tubs, rods, wheels and rollers.

Into every machine-process there enters chemical (and specific) research, the science of metallurgy, concentrated mill experience, what is retained (over long periods) of style steadfastness, and production efficiency. "The art of putting this in form so that the problem is solved as a machine is drafting."

Design, however, is the composite of all the above, for all of these factors enter into and determine the process machine.

Every great machinery organization has to guarantee another factor to its cliente'e today—or it will not long remain a competitor. It must keep abreast, nay, ahead, of current practice and improvement. In order to do this it is necessary to keep a close watch and check upon the producer's experience with each type of machine and to be able to interpret the effects of each with such skill that its value can be properly rated in improvement or actual redesign.

Even this procedure would not be productive of superlative equipment without the contribution of a somewhat intangible but none the less vital influence upon the problem. Various organizations, such as statistical, home economic, raw materials, educational and others which are in the field of pure analysis, bring to bear upon the problem many an item which influences decision and controls one element after another of the whole. A research produces certain nickel alloys, and a vast amount of brass is superseded—public realization of the value of ventilated underwear becomes general and completely new machinery must supersede the old in the knitting plant. Or, from the machine viewpoint—Jacquard made possible of commercial realization the beauty of brocade and flowered pattern. In such "tremendous details" the intricate (or simple) results are determined.

When machinery is produced to exactly fulfill a certain function it will not only be a less expensive element to the cost of textiles, but figures seem to indicate that the textiles themselves will be of greater value. This is due, chiefly, to the clean-cut type product such specific-purpose machinery can produce. It is not true that such a policy would mean large new machine units for each style vagary. It would mean more flexibility in *basic production machinery*, with the distinct advantage of producing special features with small auxiliary equipment. Such auxiliaries are inexpensive, easily operated, flexible, and easy to replace.

As merchandising is organized today, one hears many significant complaints that the merchant offers *his* idea of a thing to the customer rather than furnishing the customer just what *he* demands. The merchant's complaint is that these are the only things available. This condition is not so much the *fault* of the textile manufacturer as it is the machinery manufacturer's lack of information—applied information—applied directly to the design of the machinery in such a way that the cloth manufacturer can furnish the trade the most current demand for style. It does not seem reasonable, on examination of the conditions, to expect realization of this customer-satisfaction except by starting with such a principle in the design of textile machinery.

To commit one's self to a policy of this kind involves, further, a certain degree of attention to the study of style history, trends, and basic courses. This is an essential element of the background from which it will be possible to differentiate between general basic process machinery and special auxiliary machinery capable of producing the immediate cloth mode. Analysis of many cloths, over many periods, discloses how small a proportion of them differ in actual *basic structure* from generally accepted principles of standard cloth construction. In the proper analysis of this differentiation lies the deciding factor upon which to base design.

Added to the analysis of the problem must be the choice of a definite objective in fabric construction—and that *along classical lines*. In most invention of high order—and in all art—the guiding principle has been emphatically of the classical rather than of the pure mechanistic or productive idea. This does not mean that the fullest possible

productive adaptibility should not be gotten out of the fabric-making process. It is true, however, that most properly designed principles can be put into efficient production. What we have apparently lost sight of is that we cannot *necessarily derive* the *classic;* that is to say, the lasting and desirable, from even one hundred per cent efficient production in any field.

Produce the classical and you have a market—a permanent one—with all its benefits of low production and overhead costs. In that respect the old masters knew more than our modern production experts. We are told that "the public doesn't want that sort of thing—they want change." Explain to us, then, how it is that certain features like Coptic patterns, Renaissance brocades and Point d'Avergne are so much desired after all the years, *even when offered merely in the form of copies.* Every single achievement in styling which approaches the classical becomes a permanent practical productive asset. It is, then, the most important basic consideration affecting process machine design. Later we shall show the *balance* of all these factors and their relative importance. For the present, it is enough to point out three factors contributing to the desired end:

1. Sound, fundamental education in the principles of machinery invention is the major tool of machine production.

2. The machinery and textile industries must cooperate effectively with schools, in the teaching of *design* theory.

3. Certain producers of everyday-use lines of cotton goods have demonstrated that style is the essential sales impetus for even these more elementary fabrics. The machinery so designed as to produce sound-style products is the machinery in which we have a safe and permanent investment.

If + And + But

BY "CRYSTAL BALL"

These are three simple little words, but can be made to apply to many conditions, situations, and industries. Let us consider some of their applications to our own textile industry:

IF we had a different method of feeding a card, we would not have to press our cotton back into a lap form and beat the life out of it in the process. Today I think we may safely say that as far as opening and cleaning cotton goes, we do not need pickers and their beaters. All we require is enough vertical openers, horizontal cleaners, trunk lines, etc., and we have a more thoroughly opened and cleaner cotton than the old system of two or three pickers ever gave. Now, assuming that we do have this cotton most thoroughly and scientifically opened and cleaned, what do we proceed to do? Well, most everybody runs it through at least two pickers, with a tendency to make a good firm lap, which means that before the fiber has gotten through the two or three picking processes, it is very thoroughly bruised and battered.

AND then we take this thoroughly tamed fiber, hold it tight between a roll and a feed plate, and allow a small cylinder all covered with wire points to stroke it. Doesn't it make you shudder when you think how many fibers must meet their doom at this point? I wonder if we cannot safely say that nine-tenths of the fly taken out from under a card is composed of short fiber that originally was longer?

BUT what are we going to do about it? Cotton has always been run through pickers, and fly taken out from under cards, and, in spite of this, a good strong yarn obtained. What's the good of our trying to change this? Why, they have always put laps on a cotton card! Gentle reader, I know not the answer, but the first mill or machinery builder that discovers it will be one jump ahead of his competitors.

IF we could only spin yarn on a bigger package, think what it would mean. For example, let us assume that we now put 3,000 yards of yarn on our warp bobbins, and that we have to run 18,000 yards on our section beams, and that our warp frames run four hours to a doff. Under these conditions, it is apparent that we must put at least six bobbins onto a spool before we can do any warping. Now let us assume that we could spin on a large enough package so that the full 18,000 yards could be spun right onto the bobbin. Then all we would have to do would be to take this 18,000-yard package right to our warpers and fill up our warper beam. What would this mean?—

First: Seventy-five per cent less doffing in the spinning room.

Second: Doing away with that most tiresome, irksome, tedious job of spooling.

Third: It would entirely eliminate knots from the warps, and if you do not think this would be a good thing, just ask the weaver. I think it would be a safe bet that the weave room efficiency under this new system would jump at least two or three per cent. And a weave room that is actually running about 95 per cent under the old conditions is meant here. Brother mill man, have you ever tried to jump the efficiency of a weave room that was running 95 per cent up two or three per cent? Try and do it! Believe me, it takes a radical change to do it.

Fourth: The cost of the cloth would be considerably lowered.

AND that's that.

BUT I hear you saying *impossible.* That big word has been used a good many times in a good many different industries, until that industry grew a man who did not know the meaning of that word.

IF a vibration instrument could be perfected which could be attached to a loom, that would show whether or not that loom was running properly, do you think our repair bills would be lowered? Do you think we would need so many fixers? Do you think we would get better cloth? Do you think our looms would last longer?

AND so it goes.

BUT it remains for some one to perfect this device.

IF we all sit back and wait for some one to do the impossible, the industry will live, *AND* we will get along, *BUT* it will be in the old way, as for the last fifty years.

Let's solve some of these *IFS*, and those *ANDS* and *BUTS* will take care of themselves.

Warp Sizing

BY PAUL SEYDEL

Lubricants, Fats, Softeners.

Lubricants are designed to minimize friction between surfaces moving in contact with one another. Friction varies as the area of contact surfaces, as the speed and as the viscosity of the lubricant.

Lubrication is the principal function of fats used in warp sizing. The usefulness of a lubricant depends on speed, temperature, and a number of other conditions.

The fixed oils used mainly in lubricating are tallow oil, neatsfoot oil, olive oil, palm oil, cottonseed oil, castor oil, and rape seed oil. Sperm oil, a liquid wax, is a splendid lubricant because it has a great oiliness and at the same time temperature affects its viscosity to a lesser degree than that of other oils.

Mineral Oils are produced from petroleum, shale, and lignite; they are divided into saturated and unsaturated and closed chain hydrocarbons with flash points in excess of 300 degrees Fahrenheit. Mineral oils mix with all fatty oils except castor oil. When used for sizing, they should be mixed with an ample amount of saponifiable fat so that they may be readily removed if desired.

Greases are either natural fats such as tallow, or may be prepared by the addition of mineral oils, fixed oils or metallic soaps.

Soap Lubricants are fats combined with more or less potash or soda, or rather strong bases. Being strongly basic they are incompatible with a number of ingredients useful in warp sizing, and not as efficient as neutral lubricants.

It is generally agreed that to be valuable as lubricants oils must have a flash point of at least 350 degrees Fahrenheit. The flash point of an oil is the temperature at which it gives sufficient vapor to form an explosive mixture in an apparatus especially designed for this determination. Setting point is a term generally applied to the temperature at which a lubricant ceases to flow. The melting point is determined as being the temperature at which the grease begins to flow. A grease loses its power as a reducer of friction as it becomes liquified.

Oiliness is an essential quality of a lubricant. It relates to its unctuosity and lubricating value; it refers to the property of forming a continuous film on the lubricating surface.

The viscosity of a fat is very important in sizing; if a lubricant lacks in this property it has a tendency to loosen the fibers with coincident shedding and production of weak warps. Pure tallow is, at high temperature, very deficient in viscosity, and even at the temperature of the weave room it can be greatly improved by the addition of oils and waxes which give it body and viscosity without impairing its oiliness and other valuable properties.

Most fatty oils contain a proportion of fatty acids which increases with time of storage. Refined mineral oils ought to be practically free from acids.

Drying oils gum; that is, they absorb oxygen and lose their lubricating value. Linseed oil is the best known oil of this type, and for this reason is unsuitable as a lubricant.

A fat is called saponifiable when it is capable of being converted into soap. Soap is a compound of fat with a base. When this base is an alkaline such as soda or potash the soap is soluble in water. Some bases or metals such as aluminum, iron, manganese, calcium, etc., produce insoluble soaps.

Fixed oils and fats are mainly glycerides. Glycerides are compounds of glycerin with fatty acids; glycerin is set free when the fats are decomposed or saponified. Such a combination has very different properties from free glycerin.

A combination often does not exhibit the properties of the components. Sodium and chlorine, for instance, when in combination, produce a compound very different from their elemental form. Sodium is an extremely caustic, very oxidizable metal. Chlorine is a yellow gas, strongly odorous and poisonous. The combination of the two making common kitchen salt which is not caustic, is white, has no odor, and is seldom referred to as a poison. And so the combination of glycerin and fatty acid, called glyceride, acts very differently from free glycerin; the latter is very soluble in water and highly hygroscopic, two qualities it entirely loses when in combination with fatty acids.

Tallow is used in large quantities as a softener and lubricant in warp sizing. It is composed of the glycerides of stearic, oleic and palmitic acids.

Mutton tallow is whiter and melts at a higher temperature than beef tallow, due to its higher content of stearin. The melting point of tallow varies from 110 to 120 degrees Fahrenheit, according to its origin, the climate and the conditions the cattle have lived in. Cattle feeding on grass produce harder tallow than cattle fed on such food as oil cake.

Tallow from pasture fed cattle is superior for sizing properties to stall-fed cattle tallow.

The flash point of tallow is above 500 degrees Fahrenheit. The specific gravity of tallow is about .860.

Tallow not being an ideal lubricant for sizing, some tallow substitutes are offered under such names as rectified tallow, soluble tallow, etc. Some are mixtures of tallow oil and waxes which presumably infer a rectification; others are mixtures of tallow soap and water; some contain sulphonated tallow. Their value as a lubricant or softener is in proportion to their fat content and the quality of this fat.

Tallow has fair oiliness, but lacks in viscosity, and, at high temperature in body, to make an ideal warp lubricant. Some vegetable wax, some high melting point fat and some viscous oil should be added to it.

Tallows are graded according to quality, and several grades are on the market from edible, the best, to very low grades, both in color and composition. For use in sizing, tallow should be carefully rendered, so as to be free from odor, color, and especially free from fatty acids.

Cocoanut Oil is a white fat of about the consistency of butter, and has the odor of cocoanut; its melting point varies from 70 to 80 degrees Fahrenheit. Cocoanut oil forms a soap that lathers freely even in fairly salt and hard water. It makes a good softener, but readily turns

rancid, which is objectionable, as it imparts a disagreeable odor to the cloth.

Palm Oil in its natural state is almost blood red. Its consistency varies considerably, as well as its melting point, which is between 65 and 75 degrees Fahrenheit. Palm oil is a useful fat, readily bleached to a pure white. It makes an excellent soap. It generally contains a very considerable amount of free fatty acids. It is produced by special treatement of the ripe fruit of the palm tree, and composed chiefly of palmitin and olein, with no more than one per cent of stearin.

Castor Oil is a product of the seed of the common castor plant. It is obtained by expression and extraction; its chief constituent is triglyceride of ricinoleic acid. It contains a small amount of stearin. Castor oil has good softening qualities and marked viscosity. The best grades are white; lower grades appear green to brown. It is used extensively in the manufacture of sulphonated castor oil. The castor oil is treated with strong sulphuric acid; the speed of incorporation and the temperature control of the reaction being very important factors in obtaining a good product. After standing sufficiently to complete the reaction the oil is washed with salt water to neutralize all excess of sulphuric acid, the traces of free mineral acid, the free fatty acids and the sulphonated acids are neutralized with caustic soda and the saponification completed with ammonia. The product is a salt of sulphoricinoleic acid $C_{18}H_{32}(HSO_5)O_3$.

It is called olein oil by some authors, but should not be thus named, as this is bound to lead to confusion, olein being a very different product and one of the constituents of tallow.

Olive Oil. This oil has considerable value, and is used especially in finishing. Produced from the barely ripe fruit of the olive tree, the finest oil is obtained from hand picked fruit with careful crushing without breaking the kernel. A lower quality of oil is then produced by further treatment with hot water, and finally with solvent, especially carbon disulphide. It has good oiliness. A good grade does not turn rancid readily nor develop objectionable odors. It is a good type of non-drying oil for warp lubrication, but it lacks body and viscosity to make it a perfect size lubricant.

Corn Oil.. This oil is pale yellow; has the characteristic odor of corn, and is used extensively in soap making. Also to prepare soluble oils as substitutes for castor oil.

Cottonseed Oil is a product of the seed of the cotton plant. Its melting point is between three and four degrees centigrade. It is used extensively for soap making, for which it is very useful. Being a semi-drying oil, it is no good material for lubricant.

Tallow Oil is obtained as a by-product of the manufacture of stearin by pressing tallow. It is mainly olein.

Lard. As in the case of tallow, the consistency of the lard depends on the habits of the animal. Lard from the wild hog having much more body than that of the domestic animal, the melting point varying from 36 degrees to 44 degrees centigrade.

Waxes are a group of fats resembling beeswax in some of their physical properties. The word wax has no particular meaning, and widely different fats are arbitrarily called waxes. Vegetable and animal waxes come under five groups: 1, fixed oils; 2, soft fats; 3, solid fats (tallow-like substances); 4, waxes, and, 5, resins. Some are difficult to saponify; others saponify quite readily. Their composition is so widely varied that some of them have very little in common to justify their classification under one name.

Bees Wax is produced by the common bee, being the secretion of certain organs situated in the abdomen of the working bee. It is used to form the cell of the honey comb. A bee consumes ten pounds of honey to produce approximately one pound of wax. In nature it is a yellow product which can be readily bleached to a perfect white; it has a pleasant honey-like odor. When cold, it is brittle; in warm weather it is tenacious. The specific gravity is .970 at 15 degrees centigrade.

Japan Wax is a vegetable wax obtained from the berries of some Eastern plants; this fat is light yellow when refined. Its melting point is about 50 degrees centigrade. It is composed of glycerides which are saponifiable. It is used extensively in sizing and finishing, being especially valuable for its good body and viscosity, making a very good warp lubricant. Being saponifiable, especially when mixed with tallow, it is readily removed if its presence is objectionable in processes of finishing.

Carnauba Wax is a product of the Carnauba palm, which grows in Brazil. It is of a dirty yellow color; hard brittle; melting point 82 to 86 degrees centigrade. The principal constituent is the myricylester of cerotic acid.

Candellilla Wax occurs an an excretion from a plant growing extensively in Northern Mexico and Southern United States. Its melting point is 60 to 80 degrees centigrade. It has the color and appearance of bees wax, but is much harder.

Spermacetti is obtained from the cavities of the head of the sperm whale; it is almost blue white, crystalline, and melts at about 115 degrees Fahrenheit. It is composed mainly of cetyl palmitate. It has a very good body.

Nature offers a great variety of fats. Those mentioned are only a few of those available for warp sizing. No one of them alone is ideal either as a lubricant or softener, a mixture of at least two, preferably several of them, is essential to obtain the best results. The price, the quality and the supply available control the selection of the best mixture most economically compounded.

The gums in sizing not only have their proper individual adhesive or agglutinant function, but they must as well favor the formation of permanent emulsions of fats. An emulsion of a neutral fat in a gum is preferable to a soap solution for sizing purposes.

Soap and soluble oils, sulphonated oils, or any combinations of fats and alkali are incompatible with some of the most useful sizing ingredients, and for this reason neutral fats thoroughly emulsified in a gum medium are preferable to fats combined with alkalis.

(This is the fourth of a series of articles on "Warp Sizing," by Mr. Seydel. The next will appear in an early issue—The Editor.)

Under the name National Buffalo Black NB, the National Aniline & Chemical Co., Inc., is bringing to the attention of dyers a new acid blue-black, somewhat greener and brighter than the well-known Buffalo Black NBR. This new product possesses excellent solubility and is practically unaffected by metals, which makes it well suited for use in all types of dyeing machines. Owing to its shade, this new dye will probably find its widest use in the production of navy blues, dark greens and blue-blacks on both yarn and piece-goods.

Textile Operating Executives of Georgia Meet in Atlanta

Carding and spinning were the subjests discussed at the Spring meeting of the Textile Operating Executives of Georgia, held at the Ansley Hotel, Atlanta, Ga., on Tuesday, March 9. The meeting was an interesting and profitable one. The attendance was the largest on record, an unusually large representation of mill men being present. The occasion consisted of one morning session, with a "Dutch" luncheon, served at 1 o'clock, concluding the convention.

At the luncheon, Frank B. Williams, superintendent, Fairfax Mill, West Point (Ga.) Manufacturing Company, who was named the previous meeting to fill the unexpired term of Charles A. Sweet, was re-elected to a place on the executive committee. John F. Long, superintendent, Beaver Lois Mills, Douglasville, Ga., was named to fill the unexpired term of Henry D. Martin, who has removed from the state.

The meeting was opened by Robert W. Philip, associate editor of COTTON and secretary-treasurer of the organization, as G. A. Franklin, general chairman, was unable to be present. Following the invocation by Frank K. Petrea, Mr. Philip turned the meeting over to Frank S. Dennis, manager and superintendent Consolidated Textile Corporation, LaFayette, Ga., who conducted the discussion on carding and spinning.

The discussion followed the general lines of a questionnaire previously distributed among the members, and the first question taken up was, "Would it be any advantage to install a Buckley type beater, of the same size and diameter, in the place of the first beater in the breaker pickers? Why?"

Using Buckley Beaters in Breakers.

In defining the question, Mr. Dennis said that "as a matter of explanation, I am going to say just what we will understand as a Buckley type beater—and that is the old-fashioned porcupine beater that has prongs riveted onto a metal disc, and which revolves in a downward direction. The machinery as it is equipped at the shops usually has a 30-inch diameter or larger cylinder, but in changing from a blade to a Buckley beater it is necessary to stick to the same diameter that you have for the blade beater."

E. B. Wise, superintendent, Martel Manufacturing Company, Egan, Ga., was the first to give an experience with this type of beater, stating that "I think it is an advantage to use a Buckley beater for the reason that it better prepares the cotton for the beaters in the succeeding processes. We are installing them in practically all of our mills, and we find that the blade beater in the succeeding pickers gets a better lick at the cotton; and we think that the breaking strength is improved. We are taking out the blade beater next to the hopper and putting in an 18-inch Buckley beater, and are very much pleased."

"Do you get the same character of motes?" asked Mr. Dennis.

"Yes, practically 10 per cent more," replied Mr. Wise.

"How about the good fiber; do you get any more of that?"

"No, not quite as much. Of course, it depends on the setting, as to how much you will take out."

"We use the Buckley beater in the breaker for breaking strength," reported V. J. Thompson, overseer carding, Manchester Cotton Mills, Manchester, Ga. "We have had them in for four or five years. We find we do not get out quite as much white cotton, and do get it better prepared, and on the same setting you get out less cotton, and the motes don't look like the same motes."

"Do you think," asked the chairman, "that considering the same surface speed of the beater in relation to the speed of the rolls, that you could count the blows per inch as having the same effect on the breaking strength?"

"The Buckley will not hurt the breaking strength like the blade beater will," replied Mr. Thompson.

"Well, I would like to ask about speeds on the Buckley beater," requested J. B. Crowder, of LaGrange. "We are figuring on putting them in the breakers, and I would like to know what difference it makes in the speed of the beater, and about the setting of the beater to the feed roll."

"I run them 1,000 r.p.m. for the 18-inch diameter," reported Mr. Wise. "I set them 3/4 inch at the top and 1/2 inch at the bottom; and that doesn't take out any white cotton at all."

"In that connection, I might give the benefit of our experience," said Chairman Dennis. "We run our Buckley beaters at 600 r.p.m., though we have a larger diameter—and the larger the diameter the lower would be the revolutions per minute. We use 600 r.p.m. and about the same settings as on the blade beater. We get out a heavier grade of motes, and, as far as the breaking strength is concerned, we do not feel that the Buckley has the same effect on the cotton as does the blade. It is not so harsh a treatment as the blade beater would be. Some people think that the blade beater breaks up the heavier impurities and allows the particles to pass on through and make work for succeeding processes, whereas the Buckley beater gets them out in one large impurity, and this of course decreases the amount of work necessary for the succeeding beaters to do."

Mr. Thompson, of Manchester, reported, replying to Mr. Crowder, that he sets his Buckley beater 1/2 inch and 3/4, inch and sets it 5/16 inch from the feed roll.

The matter of grid bars coming up in connection with the beater of the Buckley type, Mr. Dennis added that "we have taken out the four top grid bars altogether, leaving a blank space there; however, I would not advise anybody to do that unless the cotton is in a very fluffy condition. But it is possible to do a great deal more cleaning."

Thomas Aspden, of H & B American Machine Company, stated that within the last few years it has become the practice among the fine yarn spinners of England to use the porcupine type beater on all cotton over 1 1/8-inch staple, using about the same speed."

"I would like to ask the gentlemen using these beaters whether or not they have vertical openers," requested W. H. Hames, overseer of carding, Anchor Duck Mills, Rome, Ga.

"We do," said Mr. Dennis. "We run verticals in tandem."

"We use vertical openers and Murray cleaners," said Mr. Thompson.

The next point brought up and discussed briefly referred to the relative merits of the 18-inch Buckley as compared with the size of about 40 inches in diameter. "One advantage of the larger diameter is in the increased grid surface that you secure, which gives more cleaning action because you have a larger circumference," the chairman brought out.

With the larger diameter you have more grid bar surface, and get better picking, but you can't just go to work and change the entire equipment to put in that larger beater," said Mr. Wise.

"No," agreed the chairman. "To put in a 40-inch beater you would have to buy a new beater section."

"We have the 30-inch Buckley running at 500 r.p.m.," said John F. Long. "Our equipment had to be changed in order to get the 30-inch beater in."

"So it is necessary," repeated the chairman, "in order to change to a 30-inch or 40-inch beater, to buy a new beater section."

An interesting question presented by Robert A. Morgan, agent, Southern Brighton Mills, Rome, Ga., concluded the discussion on Buckley beaters. "I would like to ask, if you had a mixed equipment, of 40-inch Buckley beaters, say you had four breaker pickers and half were downstroke and the other two were up-stroke, what effect would that have in the breaker and finisher laps, supposing the finisher pickers were alike, with the regular three-blade Kirschner beater?"

No one reported any experience with such an arrangement, and the Chairman asked Mr. Morgan, who indicated he had such a lay-out not then in operation, if he would not make some tests and report his findings at a later meeting.

Next the chairman passed on to the second question on the questionnaire, which read, "What is the difference in the variation of the finished roving when allowing two pounds variation in the weight of the finisher lap instead of the customary one pound, provided no other changes are made?"

Before calling for answers, Mr. Dennis requested that anyone who had made any tests for variation in the length of the lap give their findings—in terms of percentage—and also asked that in speaking of the difference resulting from allowing one and two-pound variations in weight that percentages be used for comparative purposes. In other words, he said, "I think a 40-pound lap would be about the average used by us men, so that a two-pound variation would be five per cent and a one-pound variation would be 2 1/2 per cent. In terms of length, if somebody would give us some idea as to the variation due to the knock-off mechanism not working, we could get a great deal more out of this question.

"How many think the variation in length would be less than 2 1/2 per cent? How many think it is more?" Only a few responded to either question.

"I think 2 1/2 per cent is about right provided the pickers are equipped with chain drives on the aprons," answered Mr. Wise, of Egan. "I have measured laps for 20 years, and with the chain sprocket, 2 1/2 per cent will just about cover it."

"Personally, I don't know," said Chairman Dennis. "But I do think it would be foolish for any of us to try to regulate the weight lower than the variation in the length. If we get 5 per cent variation in the length, it would be foolishness to try to control the lap within 2 1-/2 per cent, but if the variation in length would come under 2 1-/2 per cent, we could control our weights on this basis."

"I have never tried a two-pound variation on laps," replied Mr. Long, who said he had always used one-pound.

"At the carders' meeting in Charlotte," reported David Clark, "they had tests made by about 25 different men. They held some laps to a standard variation and the others they let run wild, and then weighed the finished drawing from both laps, and it was the decision of that meeting that it made no difference in the evenness of the yarn. In the first place, there is a difference in the length of the lap, a difference in moisture, a difference in the strips taken out on the cards, etc.—all of which I think equalizes things in the drawing."

"Could you tell us if most of the mills doing this use two eveners in the picker room?" asked Mr. Dennis.

"No, I do not know," said Mr. Clark.

In regard to letting laps in the picker room run wild, W. L. Phillips, superintendent, Social Circle Cotton Mill Company, Social Circle, Ga., reported that he has not run a lap back since the meeting of the association some two years ago, when this subject was briefly discussed. "And I believe the variation is just as small," he said. "My breaker lappers have eveners on them."

"Well, if you took out one of those evening motions would you still let them run wild?" inquired the chairman.

"Yes, I should think so," stated Mr. Phillips. "My drawing varies about 6.8 per cent taking every drawing sliver in the mill, and I cannot see any difference."

One and Two Process Drawing.

"What is the difference in the variation in weight and breaking strength of yarn when using one process of drawing instead of two processes, as is customary, provided no other changes are made, except to adjust the draft on the drawing frames to maintain the same weight finished drawing with one process as with two processes?"

Mr. Dennis amended this question also in order to get into a discussion of single-process drawing, and he pointed out that in this discussion a statement of the yarn number run was necesary, as it would have some bearing. "What is the difference in weight and breaking strength between one and two processes?" he asked as a general question.

Mr. Phillips stated that before going onto one-process drawing he made a test and weighed every sliver in front with two processes. He then went back and ran it through and weighed it yard for yard for yarn and could tell no difference. In changing to one-process, he reduced the front roll speed from 400 to about 200 r.p.m., on 23s yarn from 15/16 to 1-inch cotton.

"I have been a pioneer in advocating one-process of drawing," responded Mr. Clark to a request for a discussion. "I recently made a trip, and in four mills the superintendents told me that they had changed to one process. I am stockholder in three mills that are running with one process. One of the mills started off, and the other two mills have changed on the occasion of two superintendents going to each mill. They told me they didn't believe in it, but I asked them to make complete tests, and as a result they put them on one process, and you couldn't get them to go back to two processes.

"The average man runs two processes of drawing because his father before him ran it, and because his grandfather ran it. I think there is no machine that injures as

much cotton as the drawing frame, and I predict that five years from now a man will be ashamed to admit he is running two processes on yarns under 40s.

"Of course the drawing frame should not be run at any 400 revolutions per minute, and any man who is running over 225 and could run less, but won't, ought to be discharged. I know of two mills running one process on 40s and 50s making high-grade carded stock."

"I can agree with Mr. Clark so far as the speed is concerned, but not about the number of processes," said Mr. Wise. "Any drawing frame run over 225 r.p.m. is damaging the work, but two processes of drawing are better than one provided you do not run them over 225 r.p.m. I tried this out fifteen years ago, and I have found that the breaking strength is better on two than with one process."

"Well, my grandfather ran two processes of drawing, and my father ran two processes, and I ran two processes, but I changed to one, and now I have gone back to two," said Claude R. Brown, superintendent, American Textile Company, Ateo, Ga. I returned to two because the amount of cotton I had to get through under those rolls was so much that one process would not handle it. I think it depends on the weight of the sliver you put through." Mr. Brown said he runs 20s and 22s.

"I believe we can get more out of this question if we amend it and go into a general discussion of the variation at the drawing frame," suggested Mr. Dennis. "It occurred to me last night when we were talking over the questions that it might be worth while to find out the opinions of most of you as regards the best practice in adjusting the weight of the sliver on the drawing frame. Our method is not to try to keep the same draft gears on each frame. Most of us have tried to go through the mill and get the same draft gear on every one of each kind of frame, slubbers, intermediates, speeders, spinning and drawing, but it seems to be the opinion of a good many that it is a good practice to vary that at the drawing frame and put on a gear at each frame allowing the gears to run wild, so to speak, on the drawing, but holding them on all the rest of the way through. Frankly, we have reduced our total variation by letting the gears run wild on drawing, changing each frame according to its own sizing, because, for example, sometimes the drawing on one side of the house might be heavier than on the the other side."

"I would think, in that case, other conditions besides the gears should be changed," was the opinion of J. C. Edwards, overseer of spinning, Anchor Duck Mills, Rome, Ga. "I think if you have a row of ten frames and get a heavy sliver on one side, then some other condition needs changing, probably the humidity."

"We never change any draft gears on drawing, or speeders, or anywhere, and we change from 4s to 16s. We use one process of drawing. We did run 450 r.p.m. on the front roll, and cut it down to 217 on one process, and we get just as even work as we did before. Now, we do have six frames on another make on which we have to use a draft gear a tooth smaller than on the others, but this is necessary to keep the sliver to the same weight, due to the difference in the draft constants of the frames."

"With our present type of pickers, what's the use of changing the drawing?" asked Claude R. Brown, of Ateo. "You can go to any picker in any mill represented here, I venture, and watch the screen, and you will see the cotton jumping from the beater to the screen, and then the evener motion starts working, and if there is a hole in the screen anywhere the cotton will jump to it. If you hold the lap up to the light you will see a lot of heavy and thin places. The drawing frame cannot take care of that. I think the biggest trouble is in the picker screens."

"Our numbers average about 8s, and I haven't changed a gear for weight in over three months," reported J. B. Crowder, Elm City Cotton Mills, LaGrange, Ga. "I keep all the weights in the picker room. I do not see where it is necessary to change the gear on the drawing frame when you can keep your weight elsewhere with much less trouble."

"Then you adjust the weight of the cloth with the filling?" inquired Mr. Dennis.

"Yes," was the answer.

"We find we have to change a good deal in the spinning room on the filling in order to get back as quickly as possible," said Mr. Dennis.

"We have our overseer of weaving tell us that he hasn't changed a gear on his looms for weight in something like three years," said Mr. Crowder.

"But you can't change a gear on a loom for weight unless it is the pick gear, and then you get into trouble," objected Mr. Long.

"When we want to remedy weights in the cloth," he continued, "we go back to the spinning room, and make our changes there, and if our weights on the drawing need remedying, we go back to the source of the fountain—the picker room. If you keep your laps in the picker room to one pound variation you will not have so much trouble. I do not see how it is possible to turn a picker room loose and keep even numbers on 30s and 45s, and if somebody can tell me how to do it I will consider the day a very profitable one indeed.

"We have got to watch our laps in the picker room. We have at Douglasville a humidity table which is read about four times a day. If the atmospheric conditions get heavy, we change a quarter of a pound, if they get heavier we change a half a pound. We don't wait until it rains or look out the window and see the weather changing. We change right now. We have very little trouble, but when we want quicker results, we change in the spinning room."

"What kind of an evener motion have you got that you can change a quarter of a pound?" inquired Mr. Brown. Mr. Long referred this to his overseer of carding, J. E. Ledbetter, who said that "we have a Kitson picker equipped with evener motion, and also have the Buckley and two-wing beater, with evener motion on the breakers. We don't have any trouble. I am the man who reads the boards and has the changes made. We have had the system going for six months and get very good results. On the quadrant shaft we have ball bearings on each end on the finisher. We also have the Corn idler swinging pulley, and a patented loggerhead."

Mr. Wise said he also uses the humidity table in the picker room and changes in accordance with the atmospheric conditions, and added that he has not changed a tension gear on drawing frames in three years, and changes the crown gear on the speeders only slightly. He stated, in his opinion, the difficulty with drawing, in lots of cases, is it is run either like a fiddle-string or like a dog lapping up water. He said he uses one-inch cotton, with low beater speeds and tries to clean it well. He personally

weighs drawing three times a week, and finds a 6 per cent variation at the back and about 4 per cent at the front, on two processes. His overseer weighs daily, he said.

"I would like to ask Mr. Clark one question with reference to the one process of drawing," requested Frank K. Petren, of Columbus. "What is the weight of the card sliver and the finished drawing sliver?"

Mr. Clark said he did not have this information, but Mr. Thompson said his averages were a little under six draft on drawing, and that he would not recommend over six. Mr. Phillips said his card sliver weighs 62 grains and that his drawing sliver is the same thing.

Draft on Fly Frames.

"Is a draft of 7.00 too long on speeders; if so, why?" was the next question presented by the chairman, who pointed out that it seemed to be generally agreed that no one would run 7.00 on speeders if they could 'get by' running any less. Sometimes, however, conditions make an irregular distribution of draft necessary and the conditions must be met. Asking for discussion as to ideas on the distribution of draft over the various processes, he gave it as his opinion that it is best to "shade" the drafts down the further back toward the start you go.

John Klinck, superintendent, Sibley Manufacturing Co., Augusta, Ga., stated that once he worked at a mill where a draft of 165 was used on the card, to no apparent detriment to the work, and that no difference in the product was noticable between this and shorter card drafts; however, he said, cutting down a speeder draft of 8.00 helped him out materially. His idea of the proper distribution of draft was the general practice—4.00 on slubbers, 5.00 on intermediates and 6.00 on speeders.

Sometimes, Mr. Dennis reiterated, it is necessary to exceed these drafts, declaring that on one product he has as much draft as he can stand in the spinning, and runs considerably over 6.00 on the speeder, as he thinks it is better here than to go on back.

Robert S. Steele, superintendent, LaFayette Cotton Mills, LaFayette, Ga., said with two processes of drawing, 5.75 draft, 310 r.p.m. front roll speed, and drafting 3.50, 4.50 and 6.00 on the fly frames, and 10 on the spinning, he is getting very good results out of a lot of short staple cotton.

The next question was, "Should white waste which is carried back to the picker room from the drawing frames and slubbers be treated before re-working in the pickers? If so, what is the best method?" The chairman announced that the consensus of opinion seemed to be that on roving without twist, to which this question referred, the best method is to return it into the regular run of stock, treating it as lightly as possible and not re-working it at all.

Oiling spindle steps on fly frames was the final question taken from the carding questionnaire. In order to avoid misunderstanding Mr. Dennis pointed out that the two types of spindles, the plain and the reservoir, require different frequencies of oiling. With the plain type spindle, Dan R. Senn, superintendent Enterprise Manufacturing Company, Augusta, Ga., reported that he oils every three weeks. The Woonsocket reservoir type is oiled every four weeks at the Trion Company, Trion, Ga., according to L. B. Colbert, overseer of carding.

"I think it depends on where you put the oil, " said Mr. Long. This followed a statement by the chairman that it might be well to look into some of the methods of oiling every five and six weeks as reported in some of the answers to the questionnaire which he read, as he felt that all the way through the mill, sometimes, we use too much oil. "If a man goes along 'blindfolded,' with a long oil cup in his hand and is looking over at some girl somewhere, and just thinks he hits the bearing, then he is using too much oil," continued Mr. Long, "but I would hate to advocate the theory that we are using too much oil."

The last carding question was one submitted to the chairman by a member, who wanted to know the best way to re-work vacuum strips back into the cotton for making 15s yarn. "There ain't no such way," reported a big fellow in the back of the room, and, disagreeing with him, Mr. Hames of Rome said that he had had to do it, and his method was to use a hopper, running it through into the pipe from the vertical opener, without re-working the strips beforehand.

"It can be worked in colored cotton, if you have a dyehouse and boil them out," said Hal Riviere, superintendent, Eagle & Phenix Mills, Columbus, Ga., but you cannot do it in white cotton."

Spinning Discussion.

The chairman next took up the spinning section of the questionnaire, and the first question propounded was, "When the work is running fine all the way through the card room, why is it that the spinning will sometimes run bad and the ends lap up?"

Mr. Dennis stated that he would like to secure from the members, as complete a listing as possible of all the probable causes of such a condition, and urged an extensive discussion.

"There are various things that will cause this," said Mr. Long. "One is not changing the travelers at the proper time, the overseer letting the head doffer tell him they have been changed when they haven't; another thing is the question we have just discussed, standing oil. Another thing that will cause it is bad rolls, and rolls not properly cleaned. Still another is humidity. Others are not having the proper tension, and dry rolls."

"I happen to remember one time when I was a young fellow, I took charge of a spinning room, and the carder wanted to get another spinner, and he had some old ladies running speeders and he had them tighten up on the tension—this was the old Saco-Pettee frames, and you all know how it was done. Tightening up would make the speeders run good, but it played heck in the spinning. So tight tension on fly frames will cause it, too."

"Well," said Mr. Edwards, "supposing that a few of us have honest carders, and we in the spinning room get our roving in good shape; I would add to what you have named, bad roving skewers which cause the roving to be stretched, and weight levers getting on the green board. As to the head doffers changing travelers, I have learned not to depend on the doffers, and I have my section men do that, changing travelers twice a week on 7s to 16s. Other things are disfigured steel rolls, and badly worn flutes, and using sorry cots will cause the ends to snap down."

Mr. Morgan brought out that the regulation of the traverse in proportion to the diameter of the yarn affects this, as well as plumbing the spindles and having worn thread guides.

"I am not going to try to give you but one reason,"

said Mr. Floyd, "and that is that the carder might have some bad stock and succeed in getting it off his hands—a result of short or mixed or immature cotton."

"Too little twist in the roving, improperly controlled humidity and temperature are among other things," added Mr. Phillips.

"Then you think humidity and temperature go hand in hand and have a relationship?" inquired the chairman.

"Yes," answered Mr. Phillips.

"That is a question in which I have been interested," continued the chairman, "regarding temperature and humidity. A good many of us have regulators for humidity which work on the principle of a certain distance between the wet and dry bulb temperatures, maintaining that difference. However, if our dry bulb goes down, our percentage of relative humidity goes up, although our humidity regulator continues doing as much as it can. The question I would like to ask is, has anybody had any experience with the modern, up-to-date temperature control as applied to our room conditions in the mill, and, if so, did it help the humidity condition?"

"We do not have this humidity regulator and temperature control in the spinning room, but we do have it in the weave room, and as a result we get more even temperature and humidity," responded R. J. Jennings, of the Lanet Mill, West Point, Ga.

"Do you find you can control the humidity better where the humidity is controlled?" asked Mr. Dennis. "On 500 looms, how many temperature regulators would be required?"

Answering the first question in the affirmative, Mr. Jennings said that in one weave shed they have 1,900 looms, and have four temperature regulators and four humidity regulators. "In other words, one temperature regulator for each humidity regulator," said the chairman.

"We do not have the automatic temperature control," he continued, "but our overseer of weaving has become interested in the subject to the extent of stretching a row of thermometers up and down the length of the weave room, and we have found that we are able to reduce the variation in humidity considerably by keeping the temperature under control. I would especially like to know if the results from the automatic equipment would justify the expense of buying it."

Mr. Farr, of Thomaston, said they have the automatic control for humidity and also the automatic temperature regulator in the spinning room. With 120 frames in the spinning room, for the spinning and spooling they have 38 heads, and there is one control that regulates the humidity in the spinning and one in the card room. Their heating system, he said, is divided into three divisions, the regulator being in the center of the room. If there is more heat than necessary in one end of the room, the control automatically operates the valve at either end. "We have very little trouble with humidity and temperature problems," concluded Mr. Farr.

Reverting to the causes of bad running spinning with good roving in the creel, Mr. Long said: "I would like for the spinners to try out this idea if their spinning is running bad; I believe they may find the tip of the roller bar worn, and that lets the roller run to one side." He told of visiting a mill and discovering this difficulty, the remedying of which improved the spinning wonderfully. He referred again to the importance of controlling the weight of the laps in the picker room to within one pound variation, so as to make the spinning run better and make the regulation of the traveler easier.

In this connection, Mr. Simpson stated that he reduced his variation limits on finisher laps from one pound to a quarter of a pound each way, "and that helped the running of the spinning considerably."

Mr. Wise said that when he goes into the spinning room and finds the work running bad, the first thing he thinks is whether or not the humidity is all right. Then he wonders if there has been a wet day when the carder might have let his numbers get away from him. With reference to weight allowance on laps, he said he visited a mill once where out of 64 laps he found 25 which varied as much as three pounds, and when this was corrected, the running of the spinning was improved.

"We have our spinning frames leveled and lined and the spindles plumbed and guide wires set, keeping four men busy at this all of the time," said Charles S. Fagan, of the Standard-Coosa-Thatcher Company, Piedmont, Ala. "We run our 40s 130 r.p.m., from staple cotton. We have 80 heads for 128 spinning frames with two controls, and we have two men who do nothing but look after those heads and controls and keep them in good working order."

"I think a worn-out ring will cause bad-running spinning," declared G. R. Brook, superintendent, Mary-Leila Cotton Mills, Greensboro, Ga. "Also the top clearer being in bad shape, or having the first layer or two of roving wound on too tight in the card room, which will make it break back."

"I do not believe anyone has mentioned too long a draft or too large a ring, or trying to make a number too fine for the ring," added A. B. Peterson, Pacolet Manufacturing Company, New Holland, Ga. "Also an eccentric neck on rolls. Also, I find we have to run a little bit more twist than we did several years ago."

Another man, explaining his own individual case, stated that he has two hank rovings, 2.50 and 4.00, from which he had to make seven or eight different numbers of yarn, declaring this affected his end breakage, but was entirely a local condition.

"I find that raising the spindles when oiling is a big thing," said J. W. Lanier, Shawmut Mill of West Point Manufacturing Company. "Most of us, you know, raise the doffer guard, but if you will raise the spindle and pour oil in the base it will help."

Supplementing what he had said, Mr. Fagan stated that they are spinning with a draft of 16 and 17, on 30s to 80s, out of combed staple stock.

"I plumb my spindles once every two years," said Mr. Edwards, and adding more to the previous list, he declared that a wrong plate or cast iron holder would cause trouble, as would the shoe that holds the ring and lifting rod. "I run my guide wire 1¾ inches from the top of the bobbin." An inquiry from the chairman brought out the fact that general opinion coincided with Mr. Edwards' practice in this particular.

"I am a carder, but I would offer one suggestion in connection with this trouble," said J. M. Jordan, overseer of carding, Swift Manufacturling Company, Columbus, Ga., and that is, speaking of oiling, that the place most neglected is the middle bearings of the cylinders. The vibration from these will cause the ends to snap down on the frames. Also, take the proper care of the lifting rod, or else the

ring rail will be thrown out of line."

"We plumb spindles once a year," said John D. MacAulay, Sr., Standard-Coosa-Thatcher Company, Piedmont, Ala. He added that other things causing the trouble under consideration might be changing the rings one or two at a time instead of a frame at a time, which would play havoc with the regulation of the travelers. He said their rule is to change a frame at a time, using the double-flanged rings, sending the old ones to the factory for re-burnishing.

Using All-Wool Roller Cloth.

"Have you had any experience in using an all-wool roller cloth for roving and spinning frame rollers? If so, what were your findings?" This was the next spinning question taken up. Mr. Steele, of LaFayette, reported the use of this cloth. "We were using an ordinary colth," he said, and changed, and had our rolls covered with an all-wool cloth and a high-grade skin, and we find that we get far better running work. Our roll bill has gone down and our work runs better," He said he used between 1,500 and 1,700 rolls a year. Mr. Edwards said he averages about a roll a frame a day, with leather rolls. Adding to what the superintendent had said, Mr. Simpson said that his work in the spinning ran so much better with the all-wool cloth.

"We have used the combination cloth," reported Mr. MacAulay, "but now we use the best all-wool cloth and high-grade skins. It gives a better cushion."

Mr. Wise said that with the ordinary cloth, he used 260 rolls a week that cost him five cents apiece, while, with the all-wool cloth, he uses 200 rolls a week, at a cost of eight cents a roll.

"One of the answers to the questionnaire stated that it was hard to get the right sort of a lap with the all-wool cloth," said Chairman Dennis. "Our experience at LaFayette has been this: We have been using the all-wool cloth since we adopted it over two years ago. At that time our roll shop could hardly keep up with our own work, but after adopting the all-wool colth we have reduced our roll covering cost about 25 per cent, and we are making, with the same help in the roller shop, rolls for two other mills. The difficulty suggested by the answer quoted, I think, comes from the fact that in the ordinary cloth there is no life or elasticity, while there is life in the all-wool cloth. The all-wool cloth will spring back, however, and our experience is to cut the pattern about 1/32-inch fuller than with the combination cloth.

"Another trouble reported was of sticking the all-wool cloth on, because it is more tightly woven and less porous. If somebody can help us out on that I would like to hear it. Has anyone changed the consistency of the glue?"

"Do you try Venus turpentine?" asked Mr. Edwards.

"Yes, we use that altogether," answered Mr. Dennis. "But with the all-wool cloth it is impossible to get as many perfect 'sticks,' because the shoddy cloth is more porous."

Mr. Morgan asked Mr. Dennis if he used the flannel a second time. Mr. Dennis replied in the negative, and it was stated that some mills had used them over again.

"We have used the 'Knox-all' cloth for ten years," said Mr. Long. "One day a salesman came along and induced me to experiment with another kind, but like the Prodigal Son, I am going back to the all-wool cloth just as soon as I get the other used up. We have run as many as three cots off of one roller." Mr. Long asked whether it is advisable to use a 28-ounce cloth in the card room and a 30-ounce in the spinning room, or vice versa. Basing it on a 54-inch width, Mr. Dennis said he uses a 22-ounce cloth in spinning and a 24-ounce cloth in the carding, and an inquiry indicated that general practice is to use a heavier cushion in the card room than in spinning.

Cork Covered Rolls.

L. H. Beck, superintendent, Griffin Manufacturing Company, Griffin, Ga., made inquiry with reference to cork-covered rolls. Mr. Klinck reported that he has two frames with a side on leather rolls and a side on cork-covered rolls, which have been running for two years. He said the cork holds up good and that he has changed leather rolls since the cork rolls were installed, but his tests show a slight favor so far as breaking strength is concerned in favor of the leather rolls.

"We have two frames on cork-covered rolls," reported Mr. Jennings. "We have had them on for two years come next May, and they are still holding up good. As to breaking strength, we have run different kinds of twists, and there is no material difference, on 14s, so far as we can see."

"What is the difference in cost of the two kinds of rolls?" asked Mr. Dennis.

"The cork roll costs 50 per cent more," replied Mr. Jennings, "but so far ours have outlasted four leather rolls."

Mr. Petrea said that an experiment he made with cork rolls on colored work was not successful, because, he said, the sulphide colors seemed to cause the cork to crumble and pull off in flakes on the ends of the rolls. This was on 7s.

A. B. Peterson said he had tried cork rolls very successfully on filling yarn, and it turned out fine in every respect, but that he was not able to get satisfactory operation and good running work on the warp frames.

Do you use the same weight on cork-covered rolls?" was asked by Mr. Farr, and the chairman stated that was the practice named by the mills using it.

The final spinning question taken from the questionnaire was, "What is the difference in end breakage on the combination and filling build, with the same front roll speeds?" The chairman read the following answer to this question: "On a 22-hour test, run on two frames of 216 spindles each, 2 1/2-inch ring, front roll speeds the same, spinning 7s yarn—on the combination build I had 160 ends down and on the filling build 77 ends down."

A gentleman from Monroe reported that he set up two frames identically, except for the building motion, and made a comparative test on 13½s warp yarn, with 2-inch ring, and the end breakage was about ten to one against the combination wind. Thinking it might be in the frame, he changed the building motions and the results showed again in favor of the filling wind. Taking the yarn to the spoolers, the results were three to one in favor of the filling wind, he said.

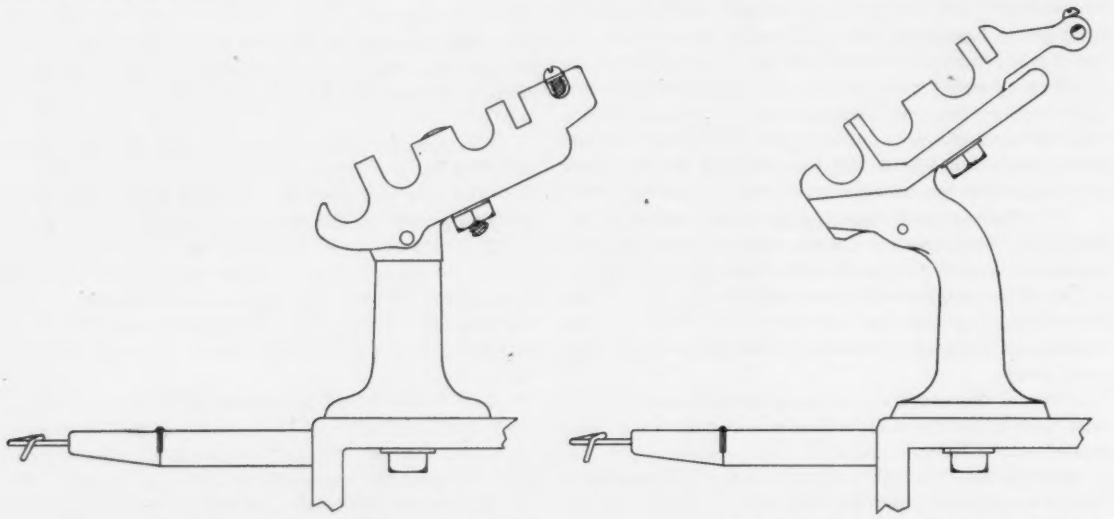
Mr. Reid said he figured that to get the same end breakage on the combination wind, it would be necessary to reduce the production considerably, in spite of a larger bobbin on the combination. Mr. Jennings said they put 110 frames on the combination build, but not considering the end breakage, they got so much waste from the combination, especially yarn waste at the spoolers, that they took them off.

Omitting the final question on the questionnaire, with refrence to possibilities of increasing production with the

use of filling wind, the chairman asked W. L. Phillips, superintendent, Social Circle Cotton Mills, Social Circle, Ga., to explain a method he had adopted in spinning by which he increased the angle of the roll stands.

Angle of Spinning Frame Rollers.

This proposition first came to notice in an article on page 723 of the May number of Cotton, soon after Mr. Phillips had adopted the increased angle on the roll stand. It has been discussed at previous meetings and at the Georgia operating executives meeting. Mr. Phillips brought two sample stands, one at a 25-degree angle and the other at a 35-degree angle, and exhibited them. To clarify the proposition in the minds of the readers, Cotton is reproducing a sketch showing these two stands side by side, in the accompanying illustration.



As explained by Mr. Phillips, the alteration consisted in elevating the angle of the spinning frame rollers from the customary 25-degree angle, or in some cases (with the combination stand), 30-degree angle, to 35 degrees, the theory being that this brings the front roll nearer to the guide wire, also putting the yarn more in a straight line between back roll and the guide wire. This, of course, relieves the yarn to a material extent from the drag on the bottom front roll. Mr. Phillips stated that in his opinion fully 90 per cent of end breakage on spinning frames comes within a half inch of the roller; in other words, at the point where the yarn dragging over the bottom front roll does not permit the twist to run all the way up into the bite of the roll. Furthermore, bringing the roll nearer the guide wire reduces the amount of yarn between the roll and the traveler.

The distance from the roll to the guide wire on the 25-degree stand, Mr. Phillips brought out, is six inches, while with the 35-degree stand, it is reduced to 4 1/2 inches. Theoretically, in his opinion, the practicable arangement would be an angle of about 40 or 45 degrees for the stand, which would put the back and front rollers and guide wire in a straight line and remove all of the drag on the front steel roller. He stated he is working toward securing a frame of this kind. The theoretical ideal condition (but impossible of attainment) would be to have the rollers in a perpendicular position, feeding directly down into the guide wire. This could not be done because the spinner could not put up ends.

Because of the fact that the change in the angle of the stand caused the front top roller to further overlap the bottom roller, Mr. Phillips raised these frames four inches by putting blocks under them, and this permitted the spinners to get ends up easily.

Mr. Phillips explained that the twist running up nearer to the bite of the roll enabled him to take out twist, and he is running the frames on 22s at a front roll speed of 150 r.p.m. against a maximum possibility of 135 r.p.m. with the 25-degree angle stands.

A brief discussion followed Mr. Phillips' explanation. Mr. Long asked whether he increased the speed with the twist gear or the cylinder. "Both," replied Mr. Phillips, "but mostly from the twist gear."

"What effect did it have on the stirrups, etc?"

"I changed the lever screw in a different position, and used the same saddles, stirrups, etc. I drilled new holes in the roller beam and put the lever screw over."

"Did you lengthen the weight wire?" The answer to this question was in the negative, but Mr. Phillips brought out that the change would cause an increased wearing out of the front cap bar nebs, but that he felt the results secured entirely justified replacing cap bars every four or five years. He said also he changed the scavenger roll and gearing in the frame, and used a longer scavenger roll. He added that the cost was approximately $104 per frame of 208 spindles, or about fifty cents a spindle.

Mr. Farr asked about the difference in the end breakage at the warpers, and Mr. Phillips replied that he had less with this system. Answering further inquiries, he said that for 22s he uses 4.50 twist for warp, and for 24s filling he uses 3.50 twist multiple, running the front rollers at 150 r.p.m.

This concluded the practical discussion, and, following some announcements, the meeting adjourned. A "Dutch" luncheon following the session concluded the meeting. The next meeting will be held in Atlanta in September, and slashing and weaving will be discussed.

Towels and Toweling

BY T. WOODHOUSE AND A. BRAND

Damask Toweling.

In the production of damask toweling, mostly employed in the making of face-towels, guests towels, etc., the art of the textile designer is allowed the greatest possible scope. The patterns are often elaborate and complicated, particularly in the finer grades, where the fabrics approximate closely in texture and general appearance to the finest table linen.

In common with other varieties of toweling, one finds the fabrics of three types, viz: all-cotton, all-linen, and union textures. The all-linen towels are highly prized for their characteristic luster, durability, and lack of fluffiness, and have a smart appearance that is unapproached by any other vegetable-fiber product.

Both the 5-thread and the 8-thread sateen weaves are used in the development of ground and figure. Occasionally one may find patterns in which the 5-thread weave has been used for the ground, and the 8-thread weave for the figure. The longer float in the 8-thread weave gives greater prominence to the design. And for this reason, especially in the very finest textures, the 8-thread and 12-thread weaves are occasionally employed.

Although what are termed full-harness jacquards are extensively employed for the lower and medium qualities, the twilling jacquard is largely used for the finer varieties, particularly if large figures are displayed in the cloth. The use of these twilling jacquards enables economy to be practiced in the preparation of the design, and a reduction of the number of cards to be secured.

The harness ties are mostly of the mixed type, in which a cross-over, or center-tie, is employed to control the border threads, and a straight through repeating tie for the body of the fabric, if more than one unit of the design is to appear in the field or central portion of the towel. A very common form of design is that in which a comparatively elaborate border next each selvage encloses a simpler motif for the body of the fabric. This simple motif is arranged in plain, sateen, and other orders, mostly in plain weave order—i. e., the so-called drop repeat.

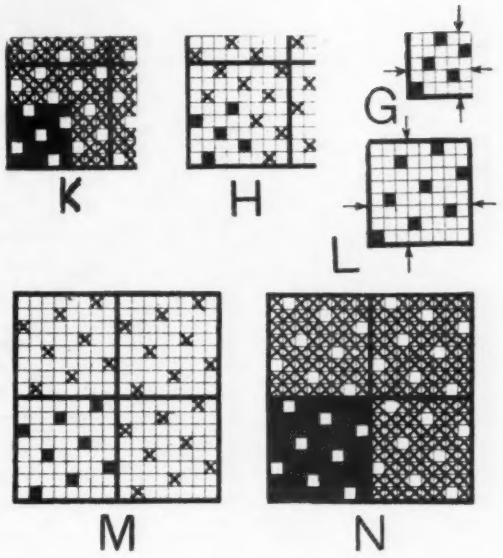


Fig. 107.

As already mentioned, the 5-thread and 8-thread sateen weaves are mostly used, and these are illustrated in Fig.

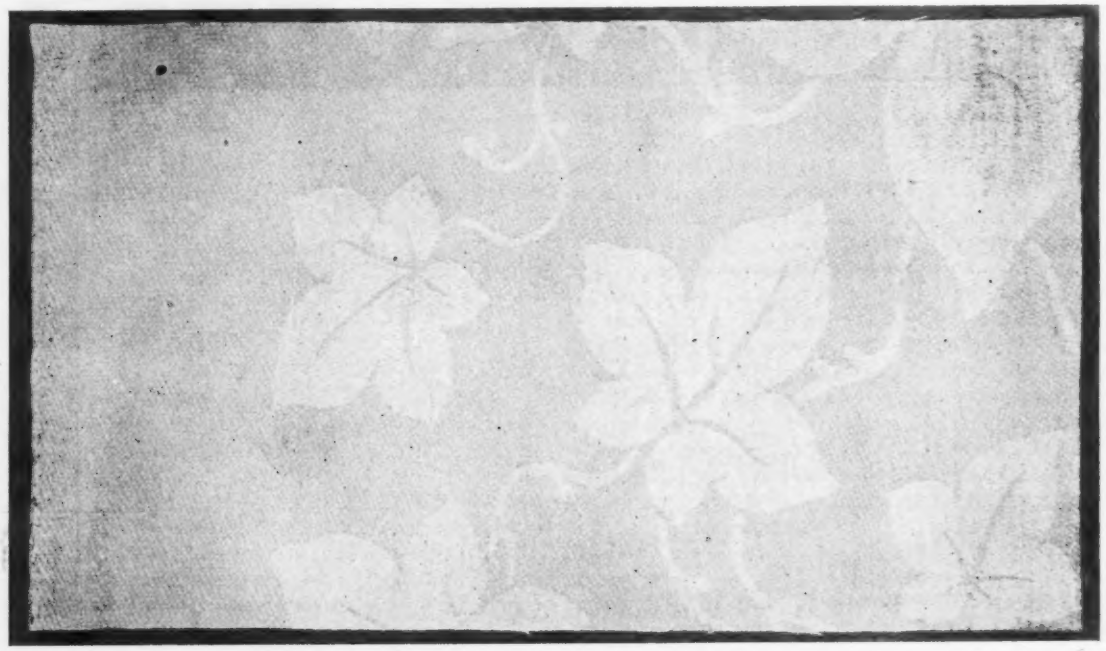


Fig. 108

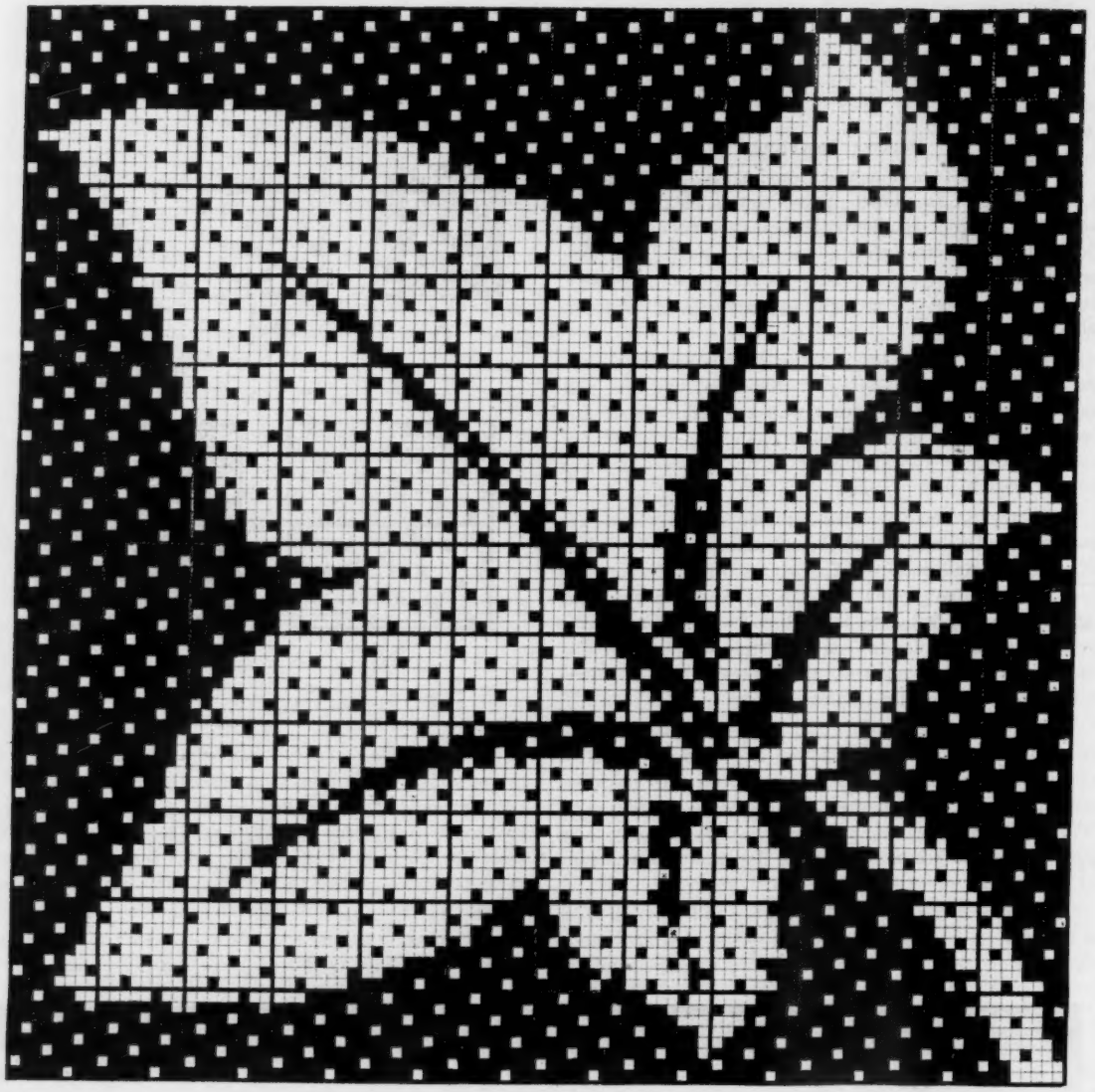


Fig. 109.

107. The 5-thread weaves have already been discussed with reference to Fig. 104; they are introduced here to illustrate a small but important point in arrangement (see page 341, February issue.)

If the 5-thread weave is placed on design paper using the intersection of the first or left-hand thread with the first or bottom pick as a starting point, the unit weave appears at G in Fig. 107. For cloths which are wholly produced in this weave this arrangement serves as well as any other, but when figured cloths are made it is important to arrange the weave so that it will weave oppositely to, or "cut" with, its contrasting weave, in as many places as possible. This is secured by splitting the initial weave G between two consecutive picks, or between two consecutive threads, which read exactly opposite from left and right, or from top and bottom. In the case of weave G, Fig. 107, this is secured by splitting the unit weave between the second and third picks, as indicated by the horizontal arrows, or between the fourth and fifth threads, as indicated by the vertical arrows. In the case of the picks, the second pick reads $\frac{1}{3\quad 1}$ from the *left* hand end, and the third pick reads similarly from the *right* hand end. In the case of the threads, the fourth thread reads $\frac{1}{1\quad 3}$ from the *bottom*, while the fifth thread reads similarly from the *top*.

Whichever of the two methods is chosen, the resulting weave is in the form shown at H, Fig. 107, where four complete units are indicated. The corresponding warp-flush form appears at K in the same figure. The other three designs—L, M and N, in Fig. 107—are the corresponding forms of the 8-thread sateen weave. It will be seen that the 8-thread weave may be split between the third and fourth picks (counting from the bottom) or between the third and fourth threads (counting from the top). There are other places to split this weave which the reader will probably find for himself.

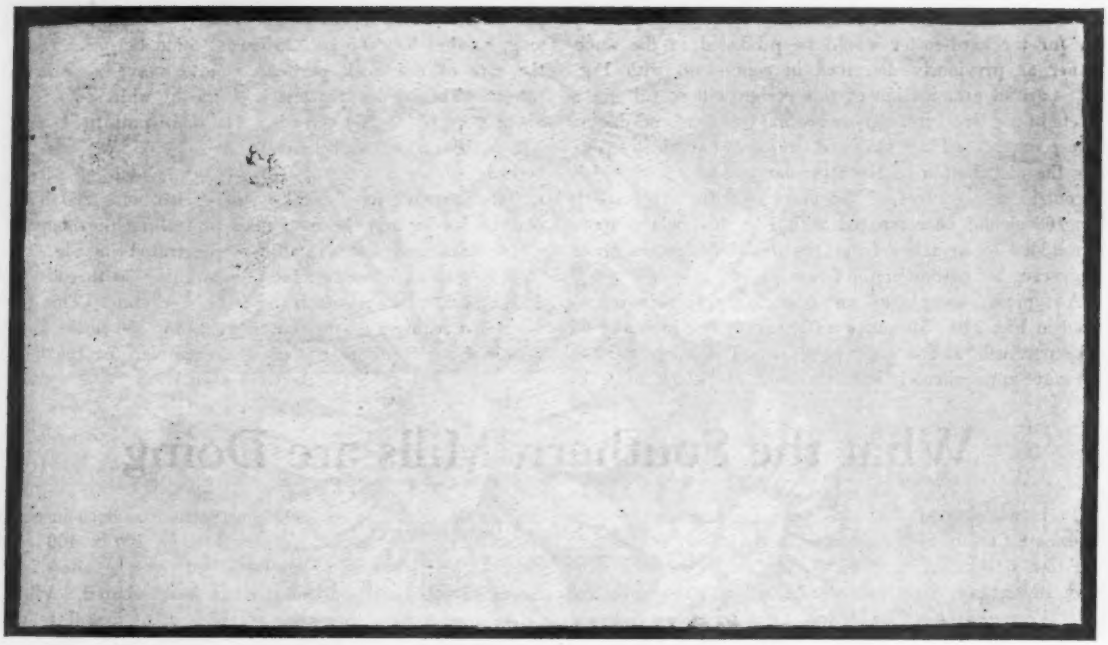


Fig. 110.

A typical example of a good class of damask toweling is reproduced photographically in Fig. 108. It is an all-linen fabric, fully bleached, containing 76 threads per inch and 86 picks per inch in the finished state. The warp is about 40 leas per pound and the filling about 45 leas per pound. The weaves are the 8-thread sateens shown at M and N, Fig. 107. The repeat of the body pattern measures approximately three inches in width, and thus contains about 3×76 threads per inch $= 228$ threads. The border pattern measures about 4 15-16 inches wide, and therefore contains 4 15-16 inches $\times$ 76 threads per inch $= 375$ threads. Now $375 + 228 = 603$, so that evidently a 600s jacquard has been used, with say 228 hooks for the body pattern and the remainder for the border and selvages. (The slight discrepancy shown is due, of course, to small errors in measurement). The pattern is about 4 3-16 inches long, and 4 3-16 inches $\times$ 86 picks per inch $= 360$ picks, so that with one pick per inch, 360 cards would be required.

The design of the fabric reproduced in Fig. 108 is a conventional arrangement of ivy leaves, a very popular motif. The point-paper design for one of the smaller leaves is reproduced in Fig. 109. It will be understood, of course, that this point-paper design is introduced to

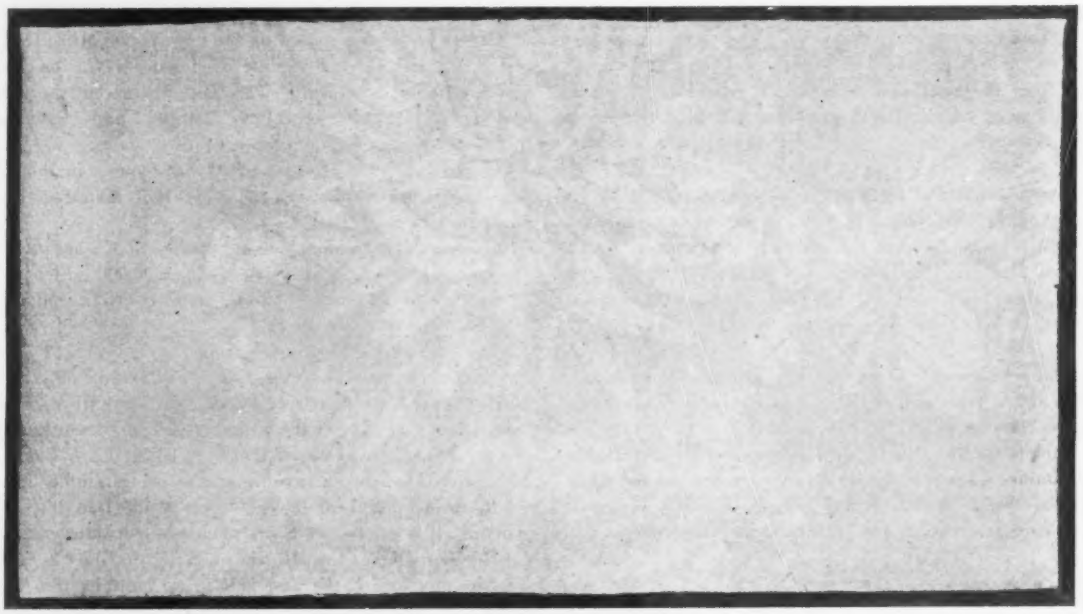


Fig. 111.

show the construction of the fabric. The point-paper design for the card-cutter would be produced in the same manner as previously described in connection with Fig. 105. Careful examination of this design will reveal slight defects in the structure. These are unavoidable, and due to the use of the twilling jacquard, which automatically controls the distribution of the stitching points, all of which are outside the control of the designer. In this respect, Fig. 108 should be compared with Fig. 104, where spots were added to, or taken from, the initial design, in order to preserve the outline of the figure.

A typical example of an all-cotton fabric is reproduced in Fig. 110. It contains 65 threads per inch and 65 picks per inch, and is fully bleached. The warp and the filling are approximately equal in count, and about 30 hanks per pound. The repeat of the pattern is about 5 inches long, so that $5 \times 65 = 325$ cards would be necessary at the rate of one pick per card. The weave is 5-thread sateen. The border pattern is 4 inches wide, embracing about $4 \times 65 = 260$ threads. The body pattern is about $5\frac{3}{8}$ inches wide, equivalent to $5\frac{3}{8} \times 65$, or, say 349 threads, giving a total of $349 + 260 = 609$. Evidently a 600s jacquard has been used here also, with 260 hooks for the border and the remainder controlling the body.

A third and last example is illustrated in Fig. 111. This is also an all-cotton fabric containing 70 threads per inch and 92 picks per inch in the finished state. This pattern also requires a 600s jacquard, about 350 hooks being required for the border, and the remainder for the body.

(To Be Continued.)

What the Southern Mills are Doing

It is anticipated that the annual convention of the American Cotton Manufacturers' Association, to be held in Atlanta, Ga., on May 18th and 19th, will be a most successful affair, from the standpoint of attendance and of the program itself, which is now being worked into shape by Winston D. Adams, secretary and treasurer.

The sessions will be held at the Atlanta-Biltmore Hotel. Golfing, scenic trips, special entertainment for ladies, and other features will be provided for the delegates. William J. Vereen, of Moultrie, Ga., is president, and George S. Harris, president and manager, Exposition Cotton Mills, Atlanta, is the chairman of the local committee on arrangements.

* * *

According to announcement from Grover C. Dilling, superintendent of the Brazos Valley Cotton Mills, West, Texas, the semi-annual meeting of the Texas Textile Association will be held at the Majestic Hotel, Mexia, Texas, on Friday and Saturday, May 7th and 8th. Mr. Dilling is president of the association, and Dan H. Poole, superintendent of the Sherman Manufacturing Company, Sherman, Texas, is secretary-treasurer. The officers announce that an invitation to mill men and machinery and supply men from the Southeast is cordially extended. Practical discussion of technical mill problems will be a feature of the meeting.

* * *

Construction and installation work in doubling the capacity of the Wabenah Mill is being pushed to completion, and it is hoped to have the addition in operation by the first of May. J. H. Thompson is president; R. P. Earnhardt, secretary; W. H. Mendenhall, treasurer; and D. M. Myers, vice-president and superintendent.

It is understood that the Red River Cotton Mills, the company which recently purchased the Hamilton Carhartt Mill No. 2, at Carhartt, S. C., will erect 25 additional homes for operatives.

Mobile Cotton Mill Products Company, Pritchard, Ala., is installing 75 new looms which added to the present equipment will make a total of 563 looms. Other improvements are being made about the plant. Luther Knowles is manager.

The 20,000-spindle yarn mill to be built by the Sauquoit Spinning Company at Gadsden, Ala., will manufacture 20s combed yarns, it is understood. The building will be of brick and concrete construction, modern in every particular. The main structure will be 100 x 400 feet, with several other buildings 80 x 100 feet. A site of ten acres for the mill and village has been secured. W. H. Merriman, general manager of the company, will remove to Gadsden to supervise the erection of the mill. The company for years has operated a plant near Utica, N. Y., and machinery from this mill will be removed to the new Gadsden plant, it is understood.

The No. 2 Mill of the Cedartown Cotton & Export Company, Cedartown, Ga., has been sold to the Goodyear Tire and Rubber Company, of Akron, Ohio. It is understood that extensive alterations and improvements, to change the mill onto tire fabric constructions, will be carried out by the new owners. In addition, a number of houses will be added to the present village. It is understood that Lockwood, Greene & Company, through the Atlanta office, will have charge of the construction work.

At a recent directors' meeting, it was decided to install 2,000 additional spindles and complementary machinery in the Statesville Cotton Mills, Statesville, N. C.

Orders have been placed by the new Vogue Mills, Gaffney, S. C., with G. G. Slaughter, Charlotte, N. C., for Sipp rayon winding equipment. This mill was recently organized by W. C. Hamrick, L. A. Hamrick, and others, of Gaffney, to manufacture fancy fabrics.

Contract for the erection of 35 new houses in the village has been awarded by the Fort Mill Manufacturing Company, Fort Mill, S. C.

Cannon Mfg. Company, Kannapolis, N. C., has placed contract for the construction of the new 50,000 spindle addition there. The main building will be 600 x 100 feet, with a 100 x 300 foot annex.

The Skenandoa Cotton Company, of Utica, N. Y., has completed arrangements for the establishment of a mill at Roanoke, Ala. It is understood the new mill will contain approximately 11,400 spindles, which, according to the report, will be removed from the Utica plant, which is being converted into a rayon manufacturing establishment.

Riverside and Dan River Cotton Mills, Danville, Va., will install a number of Sipp winders for handling rayon.

Roseboro Mills, Inc., Roseboro, N. C., have let contract for the erection of the new mill to be built by this company.

Enterprise Manufacturing Company, Coleridhe, N. C.,

MATHIESON Chemicals

Our Complete Chlorine Service

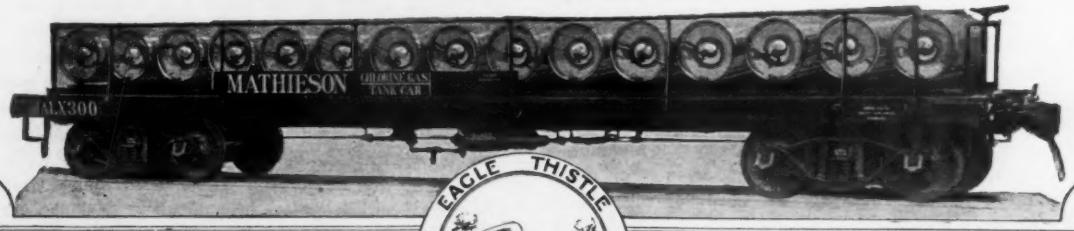
A DECISION of far-reaching benefit to the chlorine industry was the final ruling of the Interstate Commerce Commission on the Mathieson Multiple-Unit Tank Car.

This ruling has placed the Multiple-Unit Car permanently on a tank-car basis and has thus made available to manufacturers of Liquid Chlorine and other liquefied gases a flexible and economical means of maintaining shipping and storage reserves. It will permit the general extension of our practice of accurate weighing and frequent inspection which has proven so advantageous to the consumer; it assures the carriers of two methods of transporting liquefied gases in tank cars, which may be expected to increase this traffic; and it has made liquefied chlorine gas available to the consumer in containers of four sizes, according to his requirements.

To-day the Mathieson Company owns and operates 120 of the special tank-cars required for transporting Liquid Chlorine, 75 of the multiple-unit type and 45 of the Class V or single-unit type, in addition to its equipment of many thousands of the two sizes of chlorine cylinders.

We thus offer, by reason of the Company's foresight and present resources, a complete service on Liquid Chlorine adapted to the consumer's varying needs and to all conditions of supply and demand.

The MATHIESON ALKALI WORKS Inc.
250 PARK AVE. , NEW YORK CITY
PHILADELPHIA CHICAGO PROVIDENCE CHARLOTTE



EAGLE THISTLE PRODUCTS

Deal Direct with the Manufacturer

Caustic Soda - Liquid Chlorine
Bicarbonate of Soda
Anhydrous Ammonia
Soda Ash - Bleaching Powder
Modified Virginia Soda
Aqua Ammonia

is undergoing a program of expansion. When the addition now being constructed is completed, the mill will have a total equipment of 6,000 spindles. Electric power generated by the companys' own plant is used in the mill and village.

A concrete power station is planned by the Fairmont Manufacturing Company, Fairmont, S. C. The equipment will include a 600-hp. hydro-electric generator set, switchboards, motors, etc. Lockwood, Greene & Company, Spartanburg, S. C., are the engineers.

The 5,000-spindle addition to the Chronicle Mills, Belmont, N. C., will soon be completed, it is reported.

Practically 100 three- and four-room houses for operatives are being constructed in the village of the Gaffney Manufacturing Company, Gaffney, S. C., which will give ample village facilities for both day and night shifts.

The additions being constructed by the China Grove Cotton Mills, China Grove, N. C., will contain about 30,000 spindles, and it is understood that 40s to 80s combed yarns will be manufactured.

An opening room for the No. 1 mill is one project in the expansion program of the Arcadia Mills, Arcadia, S. C., which has been begun. Bryson & Webster have the construction contract.

The New England Mill Situation.

Although many lines of cotton textiles have not been active the New England mill situation has been showing gradual improvement. The mills of New Hampshire are now running within 20 percent of capacity which is high in view of the idleness of recent years. Mills in Maine are doing fully as well as that. The large Pepperell plant at Biddeford is running in full for the first time in many months. In Rhode Island, it is claimed that 85 percent capacity is being worked due to the overtime operations in some plants making specialties or rayon mixtures. In Connecticut, the mills are doing better than in any other state. Massachusetts is still running light and will doubtless continue so for a long time unless something is done to overcome the handicap of a 48-hour law upon the cost of production.

The manufacturers of Massachusetts made a very lucid and convincing statement of facts concerning the injury being done to cotton mills by the handicap of a 48-hour law at a recent hearing before the legislative committee to which was referred a bill to revise the statute. It was admittedly a true statement of conditions but the proponents of the short hour act argued that the gains to the workers in health were more important than other things, and because of a preponderance of political sentiment in that direction, the petitioners for a revision of the law were granted leave to withdraw. It is possible that a fight will be made to bring the matter to a vote and even that is doubtful. A great many Republicans do not want to go on record against manufacturing yet they dare not incur the enmity of labor unions.

Lower cost cotton is helping some mills to regain some of the specialty cloth business they formerly held and that is helping to restore producing in some centers.

Fall River is running to about 75 percent capacity and has been doing better than for two or three years. There are still many idle looms and some idle mills. The Arkwright, which had been closed for a year and resumed operations late last fall, showed a little profit for the first quarter of its renewed operations. Stafford mill No. 2 has been restarted after being idle for nearly two years. The Seaconnet and Conanicut mills are in the hands of creditors and are still idle. The Flint, Wampanoag, Barnard, and other mills are gaining in operations in a moderate way. There are many mills running in full and some have departments operating at night. The cotton mill plants of the American Printing Company are operating wide looms night and day.

New Bedford mills are running in full in the great majority of cases but there are others that are running full time but are not operating all their machinery. This is not an unusual condition in a fine and fancy cotton goods center, however, and the fact that the mills are generally earning a modest dividend indicates that they are doing better than they were: There are still a number of mills in different parts of Massachusetts that are still running only parts of their machinery. The policy of not accumulating goods against orders is being followed very strictly. With cotton lower than it was there is less apprehension of accumulating odd lots of semi-staple odd constructions yet it cannot be said that there is confidence enough in the future to warrant the building up of warehouse accumulations that may have to be sacrificed.

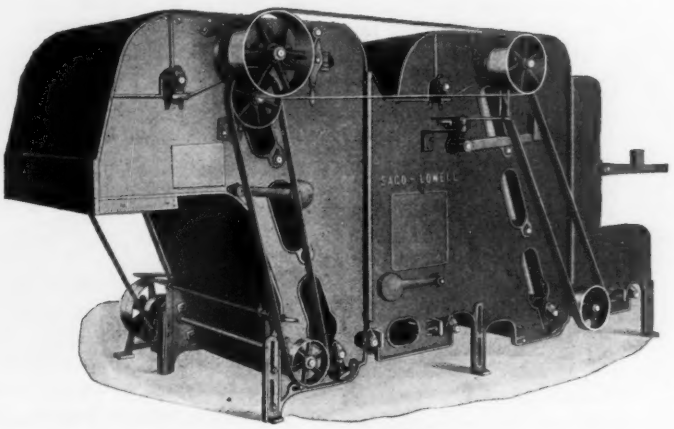
It is probable that never in the history of New England have the mills been turning out so few standard staple goods as they are at present. Mills have varied their output so greatly that some plants hitherto known as shirting or fine goods mills are making only novelties in silk and cotton, rayon fancies, or some special cloths for converting or dress wear.

There has been a great deal of discussion about Pacific Mill affairs since it was announced that the corporation would borrow $17,500,000 to take up outstanding indebtedness. At one time it was erroneously reported that the mills would sell their own products and leave Lawrence & Co., with whom they have been affiliated for a generation or more. There is no present intention of withdrawing from Lawrence & Co., or selling the products of the great plant through a mill controlled and owned agency. But the mill will hereafter finance its operations in cotton and cloths and relieve the selling house of the burden of that part of the work. The print works and bleachery of the plant have been running in full and the cotton mill plants are also now fully employed.

The selling agency of the Tremont & Suffolk mills of Lowell, Mass., has been transferred to Ridley Watts & Co., by Fred W. Steele, the new treasurer, and new selling methods and new products are coming. This was the most important change made in New England selling agencies since the transfer of the Parkhill account to the Amoskeag. The Hamilton mills of Lowell are still in the stage of being talked into a reorganization to relieve an indebtedness of a couple of million dollars brought about through overinventorying. The banks of New England are taking a much more intimate interest in the management of many of the textile properties of the section and this tendency is certain to grow in view of the needs for a closer grouping of management and financial interests that are common in many cases.

SACO-LOWELL

Largest Manufacturers of Textile Machinery in America



No. 12 Tandem Feeder

THE SOONER THE BETTER

to get your cotton down to a fibre basis. Tandem Feeders, installed between the Bale Breaker and the Vertical Openers, will reduce to small tufts any lumps that may come through, and render the work of the Vertical Opener more efficient.

SACO-LOWELL SHOPS

1824 1926

SALES OFFICES

1 Federal St. BOSTON, MASS.	1220 Mint St. CHARLOTTE, N. C.	Masonic Building GREENVILLE, S. C.	Healey Building ATLANTA, GA.

There is no change in the general status of the gingham business. The absence of normal trade on these cloths has crippled a number of plants in this section and they are diverting their looms to other work more slowly than has been the case in some other sections. Progress at the Amoskeag plant has been more rapid than at most others. The new rayon plant built by that company is in operation and rayon and cotton products are now being produced rapidly.

The most recent reports showed that 7,000 looms were in steady operation. New Fall prices made by the company were one cent a yard lower than the Spring prices. But many of the rayon products were unchanged in price. The company now makes full lines of art tickings and a wide variety of yarn dyed novelties that are ginghams only in the sense that many of them are box loom and yarn dyed production. The representatives of operatives and mill managers of this company held a meeting a few days ago and voted to continue the current wage rates for another six months in keeping with the policy established after the long strike of planning ahead to avoid labor friction. A report from Manchester, N. H., states that the mill management at this plant is more optimistic of the longer future of the cotton goods industry than it has been for three years, due to the slowly increasing orders and the success met with in reducing costs of production through the use of automatic machinery and a greater cooperation between workers and overseers.

The progress made in re-starting the large Pepperell plant in Maine has attracted much attention. The strike in the plant was ended in favor of the mill and since then orders have come in freely for drills for export, and for new lines of sheets and pillow cases and other goods being made under the new management.

The most active plants in New England are the large corporation printers' properties. The Arnold Print Works at North Adams, Mass., has changed ownership, and come under the direction of Dr. Samuel M. Jones a son-in-law of the former largest owner. Some new financing has been arranged whereby preferred stock has been issued and a mortgage of $2,000,000 placed on the property, looking toward carrying out many improvements for the handling of silk and cotton goods and other fine products more freely. The company has been doing less on cotton goods of late and will probably equip to handel rayon printing freely.

The American Printing Company at Fall River has been running for more than two months at night to keep up with the demand for percales, pongees, broadcloths, voiles, and other printed cottons. It is not doing much work on rayons. It has developed one line of linen and cotton materials for coats for young women and has been unable to supply the demand. The Pacific Print Works has been very busy, running many departments at night, trying to keep up with the Spring and Summer demand for percales and printed wash fabrics, and the large lines of cretonnes and draperies made in the plant. The Bradford Dye Association plant in Rhode Island has changed management recently, a Mr. Clay from England taking the place of Mr. Ward who has been with the company in this country since its plants were established here. The Cranston Print Works in Rhode Island are very busy on shirtings. The Algonquin Printing Company at Fall River has been running in full on all cotton goods, chiefly newly styled percale.

The bleacheries have not been doing as well as the print works but the Pacific and Sayles works, which are the largest in the territory have been operating about in full. Some of the other plants are operating to about 80 percent capacity with a few weeks orders ahead. The reductions in prices that have been made in cotton goods in the past few months have been bringing about steadily a reinstatement of cotton goods in buying favor. It is hard to point out specific instances of great gains from this cause, in so far as volume goes, nevertheless, it is significant that the largest bleacheries are now running in full, that the wide sheeting, sheet, and pillow case plants are running in full, that many of the shirting mills are doing the best business in some years, and that a number of other plants affected by the high cost of cloths and the substitution of rayon and silk, are now getting back to their stride in the production of cotton goods that are finding a readier market.

Cotton Comment.

H. AND B. BEER.

New Orleans, March 13th, 1926.

The numerous bearish features of the statistical position of cotton, pointed out in our previous monthly review, and because of it being apparently unprofitable to receive cotton on contract, unless a person has a place to dispose of it to advantage, owing to prices in America being relatively higher than in Europe, exerted their influence on the market during the past month, middling cotton to-day, in New Orleans being quoted at 18.2 vs. 20 cents one month ago.

As yet there is no appreciable change in the statistical situation, the continued falling off in exports from the United States and in domestic mill takings compared with this time one year ago, and the absence of any demand of consequence for spot cotton in the South, serving to force the South to carry a very large stock in the interior, which, at 29 inland towns yesterday was 1,492,000 bales against 856,000 last year. In addition the South has yet to market of last year's crop about 3,125,000 bales vs. 1,748,000 unmarketed at this time one year ago, or about 1,377,000 bales more than last year.

The unfavorable trade situation in England is reflected in the following statement:

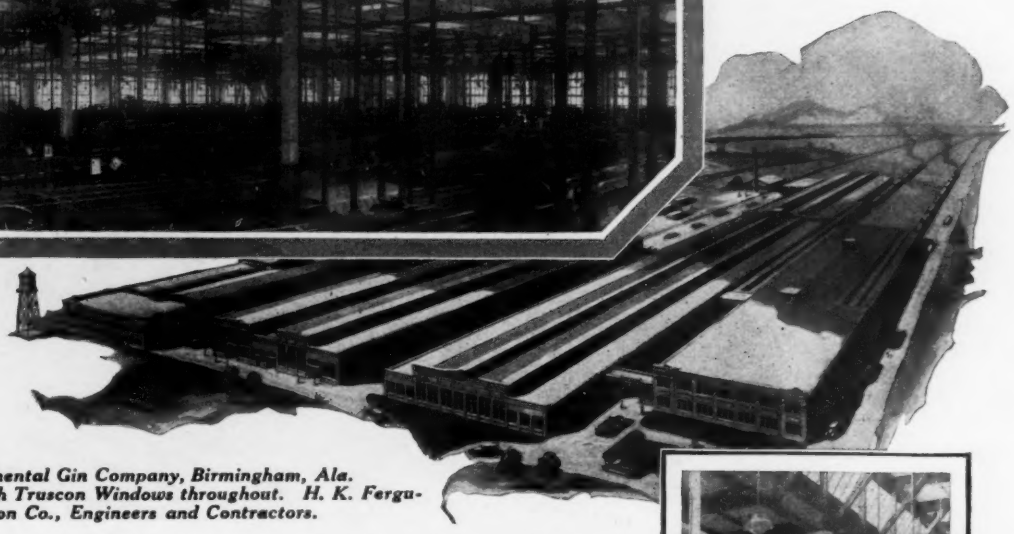
BRITISH BOARD OF TRADE REPORT FOR MONTH OF FEBRUARY.

	This year	Last year
Exports of yarns, pounds.....	16,000,000	16,000,000
Exports of cloths, yards.....	366,000,000	422,000,000

Exports of raw cotton from the United States, which were nearly 500,000 bales larger than last season last November, are now 408,000 smaller than last season, to yesterday 6,012,000 bales compared with 6,420,000. The unfavorable shipping parity between Liverpool and the American markets, the latter being too high for the former, has undoubtedly prevented a larger export movement from the South.

Meanwhile spinners takings of American cotton by the world, which earlier in the season promised the probability of reaching a total for the season of about 15,750,000 bales, are now running on a basis for the season of 15,286,000, with the probability of the basis being reduced

Virginia Woolen Mills. Truscon Steel Windows and Mechanical Operators



Continental Gin Company, Birmingham, Ala. Equipped with Truscon Windows throughout. H. K. Ferguson Co., Engineers and Contractors.

More Daylight and Fresh Air in Textile Mills

Truscon Steel Windows and Mechanical Operators bring to your textile plant two fundamental things—full daylight and adequate, easily controlled natural ventilation.

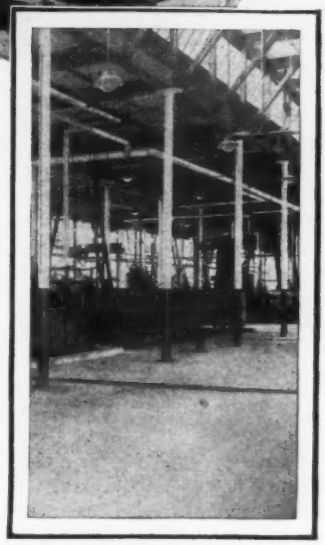
The perfect and instant control of natural ventilation assured by Truscon Mechanical Operators is particularly valuable in the textile industry where impure air would often cut down the production capacity of men and machines.

A Truscon Window installation aids directly in maintaining full production because the efficiency of your operatives is increased by healthful working conditions.

Write for catalog and full information

TRUSCON STEEL COMPANY, YOUNGSTOWN, OHIO

Warehouses and offices in all principal cities:
Foreign Trade Division, New York.
The Truscon Laboratories, Detroit, Mich.
Trussed Concrete Steel Co. of Canada, Ltd., Walkerville, Ont.



Gregg Dyeing Co., Graniteville, S. C. Completely equipped with Truscon Steel Windows and Mechanical Operators.

TRUSCON STANDARD STEEL WINDOWS AND MECHANICAL OPERATORS

*A complete line of Steel Buildings, Steel Windows, Metal Lath, Steel Joists, Steel Poles, Concrete Reinforcing for Buildings and Roads, Pressed Steel Specialties, Waterproofing & Technical Paints. Truscon maintains Engineering and Warehouse Organizations thruout the Country

TRUSCON NATIONAL ERECTION SERVICE
Assures Accuracy Speed & Economy.

further in the future unless mill takings increase from now on, whereas the indicated crop, including linters, points to about 17,100,000 bales.

The certificated stock in New York in January was as much as 75,000 bales, one month ago it was down to 34,000, now it is only about 8,000 bales. That the market should experience such an important decline of late in the face of the constantly decreasing stock of tenderable cotton in the northern market, denotes an unhealthy state of affairs, due most likely to the want of a better trade demand, particularly since white cotton, contract cotton, is supposed to be scarce.

REPORT OF THE INTERNATIONAL FEDERATION OF MASTER COTTON SPINNERS AND MANUFACTURERS' ASSOCIATION.

Bales	This season	Last season
World's con., all kinds, Aug. 1 to Jan. 31	12,289,000	11,168,000
World's con., American, Aug. 1 to Jan. 31	6,987,000	6,207,000
World's mill stocks, all kinds, Jan. 31	4,637,000	3,959,000
Worlds' mill stocks, American, Jan. 31	2,827,000	2,369,000

Recently Washington issued the following estimates:

Bales	This season All kinds	Last season American
World's carry-over July 31st, 1925.	6,114,000	3,306,000
Estimated crop	27,600,000	15,800,000
Seasons' indicated supply	33,714,000	19,106,000
Estimated season's consumption	23,350,000	14,500,000
Indicated carry-over July 31st, 1926.	10,364,000	4,606,000

In other words Washington estimates the world's carry-over of all kinds of cotton at the close of this season at 10,364,000 bales vs. 6,114,000 at the close of last season, and of American cotton 4,606,000 against 3,306,000.

Thus the trade has to reckon with the above deductions and comparatives on the eve of planting for a new crop in the South. While it is rather premature to dwell on this year's probable acreage, private advices indicate a probable average reduction of about 5 per cent in Texas, and returns indicate a somewhat smaller acreage in Oklahoma and Arkansas, but little or no change is promised for the other states, consequently, at this date, it looks as though there will be no material change from last year's record acreage.

TOTAL AVERAGE RAINFALL IN TEXAS.

In inches—	This season	Last season	Normal
For February	0.34	0.48	1.86
Oct. 1st to Feb. 28th	12.34	4.98	10.78

As noted by the returns, Texas, undoubtedly, has ample moisture for seeding purposes, but there has been rather too much rain and cold weather in the eastern half of the belt where farm work is reported backward. From now on climatic developments will likely have much influence in ruling the course of values.

H. W. Butterworth & Sons Company, of Philadelphia, have discontinued the branch plant at Greenville, S. C., removing the southern office to 1211 Johnston Building, Charlotte, N. C. J. Ebert Butterworth, treasurer of the company, is in charge of the Charlotte office.

"Leaders are not discovered or picked off of trees; leaders are those who prove themselves."

Insulated Roofs.

BY F. J. HOXIE.

In the fall of 1920 an insulating covering of creosoted lumber, 7/8-inch thick, with a 7/8-inch air space, was put on the saw tooth roof of a large weave shed. The 2 3/4 spruce plank roof, the oldest of which was built in 1908, was showing unmistakable signs of serious decay. F. P. Sheldon & Son Company, engineers, made careful calculations of the cost of a new roof and of an insulation on the old one, and reported that if the insulation was put on and lasted five years, and then the entire roof had to be rebuilt, enough interest money on the difference between the cost of an entirely new roof and the insulating roof cover-

ing would have been saved to pay the whole cost of the insulating covering. If the insulating covering kept the old roof in service after five years, there would then be a saving every year of the interest on the difference in cost.

This was a novel experiment on a large scale. The owners decided to go ahead with it. The five years are now past. The rot which was progressing rapidly in the old roof has been arrested. The old roof, at the time the insulation was put on, was so much decayed that it was not strong enough to walk on in places. The insulating stiffened these weak places and also stopped the dripping in cold weather. It now looks as though the old roof is still good for a considerable number of years more service. The accompanying illustration shows the insulation being installed.

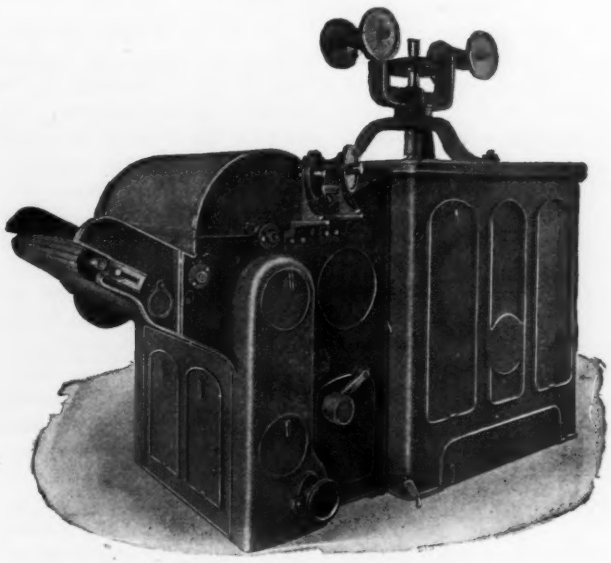
"The Retail Inventory Method and Store Budget Control" is the title of a new book published by Ernst and Ernst, which has an interest for readers outside the strict retail field. It is written to give the layman an easy and thorough understanding of the subject discussed, and is the result of modern every-day practice, representing the experience of successful stores of all sizes and kinds. The text, confined strictly to important principles and explanatory essentials, is not complicated by argument or technical detail. It provides complete information in compact form.

Anchor Post Iron Works have removed their New York sales office to 9 East 38th Street, New York, N. Y., it is announced.

COTTON MACHINERY

NEW MODEL CRIGHTON OPENER

With Cage Section and Apron Delivery



This type of Opener has been used successfully for many years in England and on the Continent. Its superior cleaning qualities make it an ideal machine for working low grade cottons. It has the advantage of adaptability to almost any combination of opening equipment.

The illusration shows a single section "Crighton" Opener complete with Balanced Rope Drive, Cage Section and Apron delivery. Machines are built without the Cage Section and Apron delivery when desired, and installations can be made with one, two or three "Crightons" in a line or section. We furnish these machines with Direct Belt, Individual Motor, or Spiral Gear Drive when desired.

H. & B. AMERICAN MACHINE CO.

Pawtucket, R. I.

Southern Office: 814-816 Atlanta Trust Co. Bldg., Atlanta, Ga.

NOTES ABOUT MEN YOU KNOW OR KNOW ABOUT

T. B. SPENCER, manager of the Ossipee and Hopedale Divisions of the Consolidated Textile Corporation, is now also manager of the Pilot Division, at Raleigh, N. C., and maintains headquarters in Raleigh.

C. E. HALL, formerly superintendent of the Hopedale Mills, has been made superintendent of the Pilot Mills, and James Smith, overseer of carding at the Hopedale Mills, has been promoted to the superintendency, being succeeded as carding overseer by Albie Johnson, formerly second hand. E. O. Steinbach, of Burlington, is now assistant manager of the Ossipee and Hopedale divisions.

CARL A. RUDISILL, of Cherryville, N. C., is now vice-president and general manager of the Spinning Company, Ranlo, N. C. He is also in active charge of the Carlton mills at Cherryville, and the Morrowebb Mills, Dallas, N. C.

H. E. RUNGE, for several years sales representative of the Draper Corporation with headquarters at the Atlanta office, has resigned to accept the superintendency of the Grendel Mill No. 1, Greenwood, S. C.

EUGENE H. PIMANUS, who was formerly associated with the Atlanta office of the Draper Corporation, has returned South to take the position formerly held by Mr. Runge.

HENRY J. PARKER has resigned as overseer of spinning, spooling and warping at the Bernon Mill of the Manville-Jenckes Company, at Georgiaville, R. I., to accept a position as overseer of spinning at the Lancaster Mills, Clinton, Mass.

WILLIAM TOLL, assistant secretary of the Sipp Machine Company, Paterson, N. J., recently made a trip through the southern textile territory with G. G. Slaughter, southern representative of the company.

N. A. GREGG, formerly superintendent of the Elmira Cotton Mill Co., Burlington, N. C., has accepted the superintendency of the Stonecutter Mills, Spindale, N. C., succeeding H. D. Haney, resigned.

D. F. POOLE has become superintendent of the High Shoals plant of the Manville-Jenckes Company, High Shoals, N. C.

J. B. MEACHAM, manager of the Atherton Mills and the Robinson Spinning Co., of Charlotte, has been made manager of the Insulating Yarn Co., of Charlotte, in addition to his other duties.

S. R. KENNETT, formerly overseer of weaving at the Manville-Jenckes Company, High Shoals, N. C., has accepted a similar position with the Borden Mills, Inc., Kingsport, Tenn.

D. R. FRY has become overseer of spinning at the Blacksburg Mills, Blacksburg, S. C.

J. W. HALE has resigned as superintendent of the Calhoun Yarn Mills, Calhoun, Ga.

C. E. MCMINN, overseer of weaving of the Baldwin Plant of the Aragon-Baldwin Mills, Inc., Chester, S. C., has been transferred to a similar position at the Glenn-Lowry Mill of the same company at Whitmire, S. C.

J. H. GOSSETT, overseer of weaving and slashing at the No. 3 Mill of Republic Cotton Mills, Great Falls, S. C., has resigned to take a similar position with the Riverside & Dan River Cotton Mills, Danville, Va.

O. R. BILLINGS, formerly of Danville, Va., has become overseer of weaving at the Veritas Silk Mills, Charlotte, N. C.

D. WILLIS HUNTER has been promoted from assistant treasurer to treasurer of the Saco-Lowell Shops. He succeeds Robert F. Herrick, Jr., who has been made vice-president and general agent. Mr. Hunter formerly was in the Charlotte office of the company.

M. T. POOVEY has resigned as superintendent of the Henry River Manufacturing Co., Henry River, N. C., to accept the general superintendency of the mills of the Carolina Textile Corporation, with headquarters at Dillon, S. C.

Q. W. ARWOOD, formerly at Stuart, Va., has become overseer of weaving at the Fort Mill Manufacturing Company, Mill No. 1, Fort Mill, S. C.

T. B. STEVENSON has become superintendent of the Knoxville Cotton Mills, Knoxville, Tenn.

RICHARD E. REEVES, president of the Hunter Manufacturing and Commission Company, New York City, died on February 27th at his home in Summit, N. J. Funeral services were held at Summit, and the burial made at Mount Airy, N. C. Mr. Reeves' death followed complications resulting from a severe attack of influenza.

Mr. Reeves was born on September 24th, 1875, at Sylva, N. C. He began with the Hunter organization as clerk, going to New York in 1901 to take charge of the office. A few years later he became the active head of the business. He was a past president of the Association of Cotton Textile Merchants of New York; a member of the Merchants Club and the Baltusrol Country Club and the Canoe Brook Country Club. He is survived by Mrs. Reeves, and three children, Richard E., Jr., Charles Graham, and Susan.

W. C. JOHNSON has become overseer of spinning at the Dunean Mills, Greenville, S. C. He formerly held a similar position at the Woodside Cotton Mills Company, Greenville, S. C. At Dunean he succeeds R. W. Herd.

C. B. JOHNSON has been promoted to overseer of weaving at the Globe Cotton Mills, Augusta, Ga.

J. F. ARMSTRONG recently resigned as superintendent of the Wymoho Yarn Mills, Rock Hill, S. C.

GEORGE H. PARKER, formerly at the Thomaston Cotton Mills, Thomaston, Ga., has become overseer of spinning and spooling at the No. 1 Mill of the Bibb Manufacturing Company, Macon, Ga.

J. B. DUVALL, secretary and assistant treasurer of the Brookford Mills, Brookford, N. C., will also act as superintendent, succeeding H. F. Moody. D. L. Howard has been made assistant superintendent.

DU PONT DYESTUFFS

Ponsol Red Violet RRNX Paste

THIS latest addition to the Ponsol series, even in the palest of shades, possesses excellent dyeing and fastness properties. As a vat violet it is of particular interest, inasmuch as it is unaffected by either heat or moisture.

Ready solubility, coupled with highly satisfactory penetration and level dyeing properties permits its use on all types of machines.

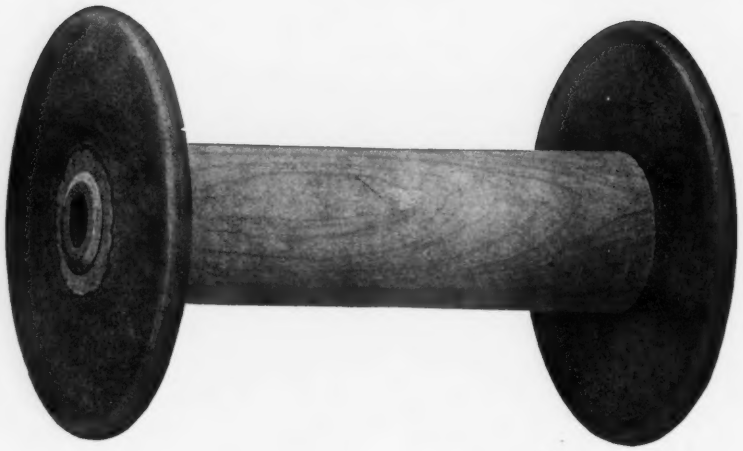
Ponsol Red Violet RRNX Paste is used to a considerable extent as a shading color of light pinks and mode shades

E. I. DU PONT DE NEMOURS & CO., INC.

Dyestuffs Department

WILMINGTON, DELAWARE

for Economy



US
Fibre Head Spools

for Safety

The use of U S Fibre Head Spools in your mill will show more all-around economy in unhampered production—decrease of seconds—less yarn wastage and longer service, than any other spools you can get.

And the safety of your employees demands that you use only spools of known quality—spools that are built with the principles of protection.

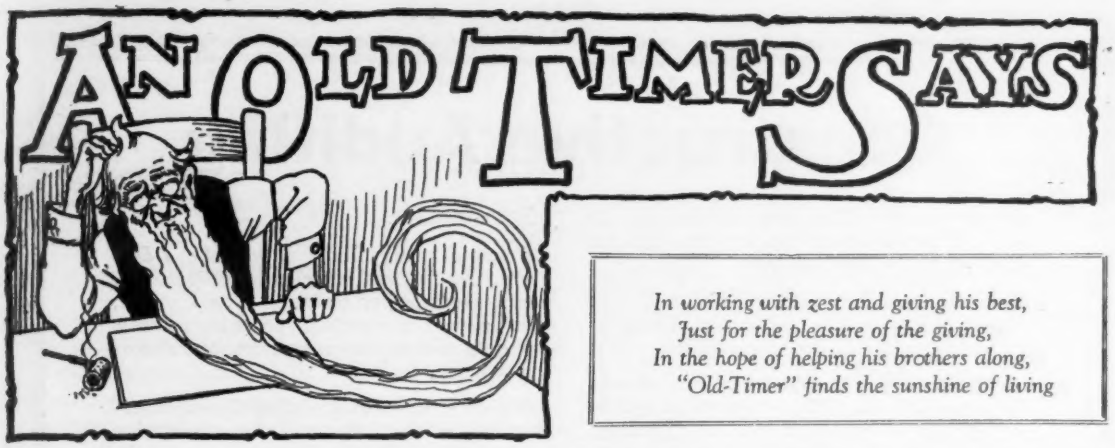
U S Fibre Head Spools answer all these demands and more, too.

Samples of U S Fibre Head Spools will be sent upon request from you. Write for them today and prove to yourself the above statements.

U S BOBBIN & SHUTTLE CO.

Largest Bobbin and Shuttle Manufacturers in the World

EIGHT FACTORIES PROVIDENCE, R. I.



In working with zest and giving his best,
Just for the pleasure of the giving,
In the hope of helping his brothers along,
"Old-Timer" finds the sunshine of living

I've looked in the dictionary to see what the word appreciate means, and I have looked up the word grateful, and although neither of these words fits just exactly what I want to say, I did come to the conclusion that if a man honest-to-goodness appreciates something then it follows that he is also grateful toward the person who caused him to be appreciative.

Therefore, I want to give expression to my feelings and let my readers know that I appreciate and am grateful for their help in getting my job back, and although I can't "call names" in answering you, there are some recent letters that made such an impression upon me that a quotation or two from them may cause some sleeping brother to wake up a little or encourage some overseer or superintendent who thinks the whole world has gone wrong and that he has the meanest job this side of Hades.

I quote: "I wonder if 'Old Timer' has any idea he is preaching the law of compensation. He says, *a man can have it EASY in early life by paying for it with UNEASINESS in later life.*"

My friend has spoken a parable in expressing a thought in his own words that "Old Timer" has been trying to cram down your throat.

The law of compensation—so few of us can realize what it means until it is too late. I only wish "Old Timer" had the gift of speech—the power to say it to every overseer and every superintendent so strongly that it would go to the very bottom of their souls.

It, of course, is some consolation to know that there are some who are profiting by what they read in Cotton.

I quote again: "I have been a silent reader of Cotton for sometime and very seldom if ever express myself on any articles, but I wish it were possible for me to reach out across space and clasp your hand so firmly that it would build you up until you were such an oversized man in spirit that you could drive your message into your brother overseer and superintendent and that your voice would ring so loud into my mind that it would drive me and all the others to get down to studying so hard and thinking so hard that we would wake up to the fact that, as you say, 'Knowledge is Power.'"

Now wasn't that a fine thought—and I want my friend to know he *has* "reached out across space" and made me stronger by encouraging me to keep up the fight.

And again: "I read your articles as if you were talking to *me* only."

Now that's the right spirit, brother mill men. When a man will do that he is sure to derive benefit from anything he reads, whether it is "Old Timer" or not.

That kind of man is trying to get something out of what he reads. It is perfectly all right for a man to read for diversion, sometimes, but the man who can't read any other way—well, I expect he fixed looms or ground cards or whatever he did, the same way he reads.

One of the men I have quoted tonight is one of the most prominent writers for Cotton's "How Other Men Manage" department, and although I do not know him personally, I consider him about the best posted man on every phase of cotton manufacturing of any person I have ever read after, (and I have read some.)

I only wish it were possible to have that Rhode Island man tell my readers the knowledge *he* has gained by studying what he has read and how much knowledge he has gained by entering into the discussions in Cotton.

I repeat, if "Old Timer" had some way of getting you overseers and superintendents to really drink in what you read—what marvelous results we would get.

H. S. Miller recently was made overseer of dyeing at the Statesville Cotton Mills, Statesville, N. C., succeeding W. M. Smith, who has a similar position with the Hickory Spinning Company, Hickory, N. C.

R. R. Stovall recently was made overseer of finishing and shipping at the Pilot Division, Consolidated Textile Corporation, at Raleigh, N. C.

R. B. Mitchell, formerly of Bessemer City, N. C., has taken the position of overseer of weaving at the Joanna Cotton Mills, Goldville, S. C.

W. F. Barnier has become connected with the Hoosier Cotton Mills, Cannelton, Ind. He was formerly overseer of weaving at the Inverness Mills, Winston-Salem, N. C.

J. F. Long, superintendent, Beaver-Lois Mills, Douglasville, Ga., has been elected a member of the executive committee of the Textile Operating Executives of Gorgia, to fill the unexpired term of Henry D. Martin, who is now superintendent of the Williamston Mills, Charleston, S. C.

Clarence Cates has been promoted to overseer of twisting, warping, spooling and winding at the Edenton Cotton Mills, Edenton, N. C., succeeding G. C. Sutton, who is now overseer of spinning.

Constructive Auditing

An independent audit is to be regarded always as the means to valuable advice from the auditor or auditing firm.

Too often, auditing service ends with the report of the financial condition of (name) as of (date).

Auditors should be equipped—and should be employed—to offer recommendations in connection with method, policies, financing, etc.; to furnish comparative statistics intelligently prepared; to point out how mistakes and waste may be eliminated, and pitfalls avoided.

Of course, *every audit should be a Detailed Audit*. But whether it be *Detailed, Semi-Detailed* or *Balance Sheet,* it can, *and should be made to,* serve as the basis not only of the financial report, but also of constructive help.

With the business man's appreciative understanding of this help, and the cooperation of progressive Public Accountants, Auditing becomes *Constructive* and offers its greatest value.

ERNST & ERNST

ACCOUNTANTS AND AUDITORS—SYSTEM SERVICE

NEW YORK	BALTIMORE	PITTSBURGH	DETROIT	MINNEAPOLIS	DENVER	NEW ORLEANS
BUFFALO	WASHINGTON	YOUNGSTOWN	GRAND RAPIDS	ST. PAUL	SAN FRANCISCO	DALLAS
ROCHESTER	RICHMOND	ERIE	KALAMAZOO	DAVENPORT	LOS ANGELES	HOUSTON
BOSTON	CLEVELAND	AKRON	WHEELING	INDIANAPOLIS	ATLANTA	FORT WORTH
PROVIDENCE	CINCINNATI	CANTON	CHICAGO	ST. LOUIS	JACKSON	SAN ANTONIO
PHILADELPHIA	TOLEDO	DAYTON	MILWAUKEE	KANSAS CITY	MIAMI	WACO
	COLUMBUS	LOUISVILLE	MEMPHIS	OMAHA	TAMPA	

ALL KINDS OF
RUBBER COVERED ROLLS
Stowe & Woodward Company
Newton Upper Falls, Mass., U. S. A.

SINCE 1915

KEEPING CLEAN IS EASY WITH
MI CLEANSER
A Special Non-eating Powder

For Scrubbing TEXTILE MILL Floors and General Cleaning

THE DENISON MFG. CO., : ASHEVILLE, N. C.

HOW OTHER MEN MANAGE

Practical Discussions by Cotton's Readers On all varieties of Mill Subjects

The Value of Twist in Roving.

Editor Cotton:

I wish you would have some of the correspondents for the discussion department start a discussion on the value of more twist in the roving as it leaves the finisher speeder. I should like to read the opinions of other men concerning the old idea of putting just enough twist on the roving to turn the skewer stick. D. A. D. (N. C.)

Opening and Picking Long Staple Cotton.

Editor Cotton:

There is an increasing and natural tendency for fine goods manufacturing in cottons to move to the South. Lower manufacturing costs offer more attractive profits on finer work than on the coarse counts that have been the backbone of the southern business since the first cotton mill was built in that section. On the average southern coarse goods, the labor charge is less than the cost of the cotton; on many of the fine fabrics of New England the labor charge is four, five, or even six times the cost of the cotton they contain. Under such conditions, it is impossible for a New England mill, with higher costs, to compete with a southern mill well organized and efficiently operated.

Of course, the slow growth of the fine goods business in the South has been due to lack of experience in their manufacture, and a lack of available trained supervisory personnel to man fine and fancy goods plants. Coarse goods were easier to make; plenty of experienced help for such work was to be had, and competitive conditions made possible a handsome profit on even the coarsest work when this was sold in the same market with northern goods produced with more expensive labor. Now, southern manufacturers are beginning to think more and more of further capitalizing the possibilities of lower labor costs on those products where the cost of the finished product is nearly all labor.

Lower labor costs do not imply simply lower wages for the help. At the same wage per week, a fine mill in North Carolina would have a tremendous advantage over a similar mill in Massachusetts, because the North Carolina mill could turn out the same volume of product with much less help. The North Carolina mill would run 55 hours a week as against 48 in Massachusetts, and the southern plant would assign machinery to the help on the basis of their ability to run it, rather than on any arbitrary basis laid down by a labor organization.

I have talked to many agents of New England fine mills that have practically closed down their yarn mills, and run the weaving on southern yarns, bought cheaper than they could possibly make them. These men ask me how it is possible for southern mills to make yarn so cheaply, and when I explain, they do not want to believe the explanation.

We invite our readers to make use of this department for the discussion of any and all problems arising in the mill or the finishing plant. Questions, answers or letters need not conform to any particular style and will be properly edited before publishing. The editors do not hold themselves responsible for any statements of opinion or fact which may appear in this department unless so endorsed. This department is open to all.

One mill, running on 80s combed yarn largely, was assigning two speeders to a tender, and about 1,000 spindles to a spinner. They were also buying yarn from a mill running six speeders to a tender, and at least 1,600 spindles to a spinner. The northern mill shut down at noon, and everybody went home. Their southern competitor ran right on through without stopping; getting the benefit of the noon-hour production. The northern man said it couldn't be done. The southerner was doing it. It is not a question of northern help not being able to handle as much work as southern. They just won't. And as long as they feel that way about it, fine goods manufacture is going to work down into the South in ever-increasing volume.

Such being the case, there must be a number of southern mill men, more or less unfamiliar with running staple cotton, who would be interested in a discussion of opening and picking practice as generally used by mills that have long been making finer work. Opening and picking are the departments in which a mill man now running short cotton is most likely to trip up in changing over to long staple. After the stock has once gone through the card room, there is very little difference in the conduct of the finest and coarsest mills, except in so far as cleanliness, care, and expertness of operation are concerned. But in getting the cotton from bale to roving, there are some basic differences to be considered.

The average coarse mill opens the bales in the warehouse, piles the cotton into a bale breaker, slams it through some kind of opener, and right on through to the breaker pickers without wasting a minute. Some omit the opening machine, and some even leave out the bale breaker as well; putting layers from the bale right into the breaker hoppers. The stock then goes through three, or perhaps four blade-beaters, often running at too high a speed, and is pronounced ready for the card room. The average coarse mill prepares its laps this way, and gets away with it, because its requirements are not exacting. If the same mill changed to long staple cotton, and tried to run the picking the same way, it wouldn't get away with it as well. But still, they try it.

The whole process of opening long cotton is different from that employed on short. Short cotton does not mat down in the bale as badly as the long; it is generally more wiry, and fluffier; it does not cling in pulling open matted lumps as the long staple does; it is less likely to be broken by rough handling. The longer the staple, the worse tangled

standard specification!

Creo-pine Sub-flooring

Arcadia Mills, Spartanburg S. C. Lockwood, Greene & Co., Engineers; Gallivan Building, Co., General Contractors. Built with Creo-pine sub-flooring and timbers.

for Building or Rebuilding!

The foremost American Textile engineers recognize Creo-pine as the standard cotton mill sub-flooring, both in new construction and in the replacement of untreated timbers that have rotted out.

During a period of many years Creo-pine sub-flooring has proven its durability and economy over any type of sub-flooring procurable.

No matter how large or small your job—you will find Creo-pine quality uniform and unvarying.

Your architect or engineer has used Creo-pine—ask him—or if you prefer, write us direct concerning your floor problems and we will gladly give you the benefit of our advice. It is quite likely that we have had experience with construction conditions exactly similar to those which confront you.

Creo-pine sub-flooring installed once, eliminates floor troubles for all times.

Creo-pine sub-flooring is carefully milled from selected, sound, felled-alive, air seasoned yellow pine, free from defects. It is treated by the S.W.P. vacuum pressure process which first draws out all of the sap and then forces the creosote oil deep into the pores of the wood under tremendous pressure. The result is a sub-flooring impervious to fungi and dry rot. A sub-flooring that will outlast the walls. That will never need replacing.

Southern Wood Preserving Co.
Atlanta, Ga.

Treating Plants East Point, Ga., *and* Chattanooga, Tenn.

Sales Offices:

NEW YORK · PHILADELPHIA · PITTSBURG · TOLEDO
CLEVELAND CHARLOTTE, N.C.

the fibers will be in the bale, and the easier they will break in opening. Rough treatment will break up so much of the staple in very long cotton that there will be excessive waste and fly; the strength of the yarn will be impaired, and the appearance of the yarn affected by the numberless neps caused in breaking the fiber. It is cheaper to buy short cotton at first than to get long staple and then break it up.

The ties should be broken on bales of long staple cotton as far in advance of its use as possible, so that it can swell up as much as it will before being used. Sometimes it may be a good idea to take an air hose with a sharp nozzle and stick this into the bale in a number of places to puff it up somewhat. This works particularly well on foreign cottons, which have been compressed to a greater density than the domestic. After the bales have been allowed to stand as long as practicable, they should be fed into a bale breaker or feeder, through a condenser, and into a bin for storage.

The matter of binning cotton for ageing is almost unknown in coarse mills running on short staple cotton. A few duck mills have ageing bins, but in most cases the cotton is in the card room in a few hours after the ties are cut from the bales. With staple cotton, there is probably no single factor so important as proper ageing, particularly on very long foreign staple, compressed in high-density bales. A week in a bin works wonders in loosening this stock up and getting it ready for picking. Before putting in the bin, it should be mechanically opened as much as is safe, so that the ageing will be of greatest benefit. On account of the highly compressed condition of the stock, it is generally necessary to use a bale breaker on foreign cotton, as the apron in a hopper feeder will not stand the hard usage met in opening this cotton, but wherever possible, it is better to use several small hoppers than one large bale breaker, as the mixing is more thorough if a number of hoppers empty out on a traveling lattice. Four hoppers, run slowly, and all emptying at the same time into a common conveyor will give a very thorough mix if from six to ten bales are laid out for each hopper.

The stock should be carried from the hopper to the bin through a pipe and condenser, rather than by means of lattices, as the blowing helps to loosen up packed cotton, and a good bit of dust and fine speck will blow out through the condenser screen. Between the feeders and the bin, the stock may be put through an opening machine to further loosen it up. A Crighton or Murray opener can be used on any stock if operated properly. When used on long cotton, the beater in the Crighton should be raised enough to get a very wide setting from the screen or grid bars; the speed should be moderate, and the total production light. The average Crighton is set too close, run too fast, and on too much cotton per hour. A setting of one inch from the screen, with a speed of 450 to 500 r.p.m. and a production of 500 pounds an hour will give good results if the machine is operated with a stiff draft to pull the cotton through. This will give very little cleaning, as compared with higher speed and closer setting, but a Crighton is not a very good cleaner anyway; its proper function being to open the stock for the benefit of the following processes. For more cleaning in the Crighton, the draft is often lessened to allow the cotton to dwell in the machine, and to be thrown with greater force against the screen, or grids. This is almost certain to curl and nep long staple cotton, which should be whisked through the Crighton with no delay. If the Murray type of opener is used, it should be operated at slow speed, and light production. The Murray machine has no settings to make, the beater being permanently set about two inches from the screen. A speed of 375 r.p.m., with a production of 1,500 pounds an hour, and a stiff fan draft gives good results. The speed may be increased to 400 if no curling is evident. Either of these openers will give poor results if crowded for production, or run too fast. The Murray, or horizontal type, having a very long, horizontally placed screen, will take out a considerable amount of light leafy trash. Where the Crighton is used, a few sections of cleaning trunk, or a C O B machine following it will take out a lot of light trash similar to that removed by the Murray.

The cotton is generally stored for ageing in a number of different bins, corresponding to the number of mixes being used, and the length of time the stock is to age. For this purpose, a distributing lattice takes the cotton from the condenser and conveys it to the different bins. If the bins are large, it is a good idea to have two or more gates for the distributing lattice to drop the cotton from, as otherwise it will pile up in a conical heap, and in order to fill the bin, the man doing this work will have to spread the cotton around with a fork, and will trample it down so tight that it will not air out as it will if loose and fluffy. The distributing apron should be arranged to drop the cotton out so that it is not necessary to do anything further to it until it is ready for use.

If the storage bins are approximately air tight, and have an air outlet on the outside of the mill, a fine way to fill the bins is to blow the cotton directly into them without the use of a lattice apron. The pipe may be set in the side wall and fixed with a slightly movable joint so that it may be swung about to fill the entire room without any spreading by hand, or the pipe may come up through the floor in the center of the room, and discharge through an elbow similar to the ventilators used on top of mills. This elbow can be turned around to throw cotton in every direction, and fill the bin completely with very loose, fluffy cotton. A bin thus filled will not hold so much cotton as if filled with a lattice, as the stock is so much looser, but this very looseness and fluffiness is what is chiefly desired for proper ageing.

Bins should naturally be of fireproof construction if possible, and preferably located above the picker room, except that in a small mill it may be more convenient to put the bins just behind the breaker hoppers and feed these by hand. In a large plant, with bins above the pickers, the cotton can be fed down by gravity, and one man can feed almost any number of machines. The finest kind of automatic feeder can be made by running a large pipe, about two feet in diameter, from the bins above the picker room down to the breaker hoppers, and letting the pipe discharge about six inches below the top of the hopper. This pipe will hold considerable cotton, and will feed it automatically into the hopper as it is required, keeping the level of cotton at exactly the same point all the time, which is the foundation of even breaker laps and better running work all through the mill. This feature alone is worth going to a good bit of trouble to get, as hand feeding is irregular, and allows the amount of stock to vary in each hopper to such an extent that very uneven breaker laps may result.

Two things are necessary for uniform breaker laps. First of all is well opened cotton, and the second is uniform vol-

ume of cotton in the hopper. Poorly opened cotton will be carried up on the elevating apron in chunks, and these either will be knocked off entirely by the doffing roll, or will go through whole, thus making a very irregular lap. A lump is opened up by the beater into a considerable volume of cotton, and this is condensed on the screen in a small area near the place the lump came through. Thick and thin places result in the lap, and the finisher picker has too many irregularities to smooth out. Better breaker laps make better finisher laps, and care should be taken to see that all hoppers are properly fed to get uniform results.

Too much picking of staple cotton is to be avoided. Three, and four lines of blade beaters may be all right on some kinds of short staple work, but may easily damage long stock. The Kirschner, or carding beater, a great favorite on short staple work, is very little used on long cotton, the general belief being that the pins damage the long fibers. Blade or cylinder beaters are almost invariably coming into use in this country. Large cylinders of the Buckley type have been used in opener and breaker pickers for many years, but the small cylinder as a substitute for the blade beater seems to be the best thing for long cotton.

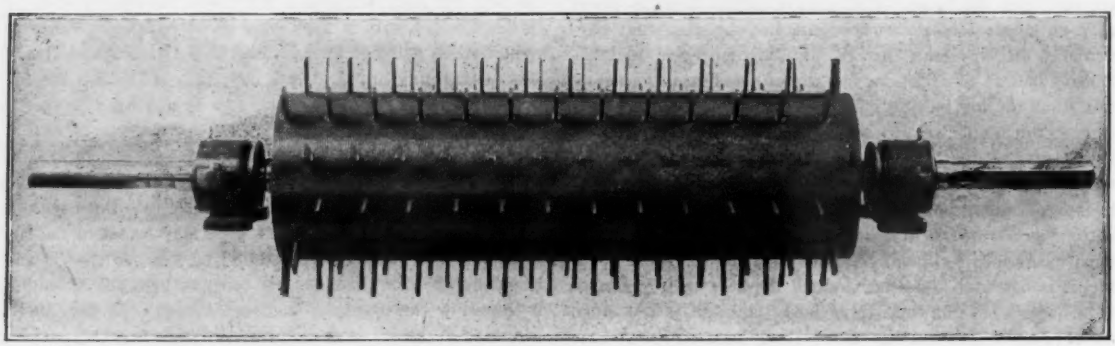


Fig. 1.

Cylinder beater for use on breaker, intermediate, orfinisher pickers. The arms, or picks, are set in a steel cylinder, which gives a surface that no cotton can catchon. All arms are straight, and thus somewhat stiffer and less likely to get bent than arms set as shown in Figs. 2and 3.

A good arrangement for the picker room following the opening process already described, would be a two-beater breaker, and single beater finisher, using cylinder beaters on both.

This cylinder beater was illustrated on page 1035 of the August, 1925, number of COTTON, and is here reproduced, in Fig. 1. Arms about ¼ inch thick by 1¼ inch wide are set in a steel cylinder and staggered around it in such manner that every portion of the sheet of cotton passing over the feed rolls is struck once in a revolution of the beater. The action here is much gentler than that of the blade, and damages the staple less, if at all. The blow of the blade is very severe, and the cotton is torn off under very harsh treatment. The fingers, or picks, on the cylinder are narrow enough to allow the cotton to part and let them through without damage to the staple, yet wide enough to insure keeping the sheet trimmed short and clean. While there is only one pick passing a given point in one revolution, the fact that the cotton spreads to let the arm through throws the fibers from the path of one pick into that of another, which keeps the sheet of lap thoroughly opened up all the time, and dislodges foreign matter effectively. An improperly designed or constructed cylinder will not make good laps, however, and care should be taken to see that the design is correct.

In Figure 2 is shown a style of cylinder that will work fairly well on breakers, but will not make a good lap. The rivets, or cap screws that hold the picks on the discs will catch cotton in the shape of miniature comets, and these are objectionable when thrown off into the lap. There is also too much air space between the spacing pulleys and the circumference of the discs, and this tends to make lumpy laps. Also, the laps will be very stringy on account of the shape of the pick ends. Only one row of picks in each cylinder will stick straight out and present a square edge to the cotton. All other arms are bent, and thus present a triangular point to the cotton. This will not pull the lint off properly, and a stringy lap results.

The construction shown in Fig. 3 avoids these troubles by using larger spacing pulleys to cover up the rivet burrs and cut down the air space, and reduces the stringing by bending the arms so as to present a square surface to the lap. Arms so bent, however, are easier to get out of line if struck on a buckle or other metal objects, and of course if an arm gets ever so little out of line, a string forms where the lap is not struck. The construction in Figure 1 gives a rigid arm that always offers a square shoulder to the lap.

These cylinders may be run at 1,000 r.p.m. on finisher and second breaker beaters, and about 800 r.p.m. on first breaker beater. Settings of about 3/16 inch on first breaker beater, and ⅛ inch on the others will give good work.

If blade beaters are used, the first breaker beater may be either two-wing or three-wing, the preference for three-wing being due to its striking a lighter blow for the same number of beats per inch. A three-wing at 600 r.p.m. will strike as many blows per minute as a two-wing at 900, but since the force of the blow is proportional to the square of the speed, the one running at 900 will strike more than twice as hard a blow as the one running at 600. In either case, a blade beater should not be run at high speed on long cotton; 500 to 600 for a three-wing, and 750 to 900 for the two-wing is fast enough. The settings would be about the same as for the cylinders, or slightly wider. A lap should not be made in less than ten minutes, which at the speeds suggested, would result in about 40 blows per inch. It must be kept in mind when figuring blows per inch, that beater speed has everything to do with this. A beater running 750 r.p.m. and making a lap in ten minutes will deliver the same number of blows per inch as one running 1,500 r.p.m. and making a lap in five minutes, but since the beater speed is twice as great, the force of the blows will be four

times as great, and the cotton will be much more severely punished with the same number of blows per inch at the high speed.

It must be remembered also that excessive beating of long cotton has a result not encountered on short staple, in that the short fibers, one inch or less, will be pushed through the feed rolls so far before the beater strikes them that they are readily disentangled and beaten out of the lap. Long cotton, however, 1 5/16 inch or over, will be struck by the beater before it is freed by the feed rolls sufficient to allow its dislodgement from the lap, and this, coupled with the fact that it is more tenacious than short staple naturally, and not as easy to separate, will cause very harsh treatment under conditions that might be suitable for short stock.

The weight of lap to be made will depend entirely on the numbers of yarn to be spun, and the further organization of the mill, but would probably not run over 12 ounces

Fig. 2.

Type of cylinder beater often used for breaker pickers. The steel discs are spaced from 2 ¼ inches to 3¼ inches apart, depending on the width of the picks, and the number of rows of arms. The picks, or arms, are then necessarily bent to throw them into the proper position for striking. Only two rows are shown here: those that go out straight, and those with the greatest amount of offset.

The rivets that hold the picks on the discs are exposed, and will catch lint, and the bent arms on the top row are thrown so that they do not present a square edge to the lap. There is also too much space between the barrel of the beater and the ends of the picks. This beater will not make a good lap; tending to make it stringy, and somewhat lumpy. It would not, therefore, do well on a finisher, though it might be entirely satisfactory on the first section of a breaker where the subsequent beaters were taking care of any stringiness or lumpiness.

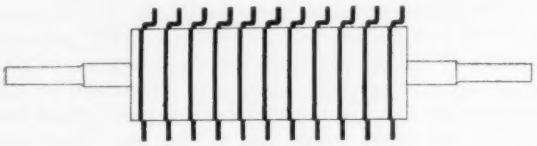


Fig. 3.

A modification of the beater shown in Fig. 1, to make the beater suitable for intermediate or finisher pickers. Note how the spacing pulleys are larger, and cover up the rivets to prevent their catching cotton. Larger spacers also make a bigger barrel diameter, with less air space between barrel and arm ends. The smaller air space prevents clogging up. Note also how the top row of picks is arranged. Bending in this manner throws the arm out straight, and presents a square edge to the lap. This beater will make a better lap than the one shown in Fig. 2.

for the finisher lap. In a picker room such as I have described, the finisher lap should be sufficiently even to give good running work, although, some would prefer intermediate pickers to get the benefit of the extra doublings and the evener motion. The need for intermediates can be very well taken care of by following the suggestions about feeding the breakers. Poor breaker laps will make intermediates a necessity, but with care in feeding uniformly, the breaker laps ought to be good enough to make the intermediate unnecessary.

A great aid to evener laps is the frequent and thorough cleaning of the back of the picker, to remove all chokes in apron rollers, and dirt in those and other bearings that have to be worked by the evener belt. Better still, all rollers can be mounted on ball bearings, which will minimize the friction drag on the evener belt and result in less belt-slip and consequent loss of feed. It is almost impossible to overemphasize the importance of keeping all rollers pulled by the evener belt in good running condition, or using ball bearings. The weight on the apron is constantly changing as the laps run down. To illustrate: if a 40-pound lap is used, at the moment of a lap running out on the apron there will be one lap weighing 10 pounds, one weighing 20 pounds, and one weighing 30 pounds, or a total of 60 pounds on the apron for the evener belt to keep in motion. Putting up the new lap increases this to 100 pounds at once; an increase of 67 per cent in the load on the evener! And this assumes that only one lap at a time is set up. Many mills allow two laps to run out at once, which makes matters much worse. If that is done, the load on the apron is jumped from 40 pounds up to 120 pounds, an increase of 300 per cent. The correct way to keep an apron loaded is to put up only one lap at a time, and never allow the tag end of a lap to run through the feed rolls until it has been smoothed out and the new lap run in with it. There is no evener that will properly take care of a lap running out. To do so, it is necessary to speed up the feed 33.3 per cent, and this would feed the lap to the beater faster than desired, even if the mechanism of the evener would control the speed correctly. If only one new lap is put up at a time, there will never be two tag ends from behind going into one lap on the front. Every tag end is a source of possible thickness or thinness in the lap being made, depending on whether the setting up of the new lap is done properly, and two poorly pieced laps running into one lap may easily spoil it for weight.

The picker room just described should give as good results as any other combination on staple cotton, but there will be many other arrangements that will be entirely satisfactory. Some men would prefer to leave out the opening machine between the opening room and the bins, and to put the cotton through the Crighton or Murray type after it had been aged. Others might eliminate both of these machines entirely, and use a large Buckley cylinder as an opener. The exhaust opener, a machine little used in this country, but very popular in England and Canada, could be put in the line between the bins and the breaker picker. These machines fluff the stock up, and open it very satisfactorily. Almost any combination of standard picking machinery can be used if it follows the basic principle of thorough and gentle opening so necessary for best work with long cotton. Any picking system that beats the life out of cotton will lower breaking strength in a mill running long stock.

Very little need be said about carding here, as the various card settings, weight of roving, weight of drawing, drafts, etc., are such highly controversial subjects that no one opinion would likely meet with very general approval, and it is quite probable that if all figures for one of the most successful mills in the world were given, there would be a slim chance of finding anyone to agree exactly with them.

However, it is absolutely necessary to card light for good work on long stock. Southern mills carding 125 to 150

pounds of cotton per 10-hour day might have some trouble trying to visualize a production of only 40 pounds, but that would be enough for good running work. Speeds that might put short cotton through with little damage to the staple, would soon ruin the long fibers that are so difficult to untangle and straighten out.

The prime requisite of a coarse mill is production. It makes its profit on quick turnover of a big production per employee. The fine mill, using high grade cotton, and turning out high quality fancies or staples, must aim at quality rather than production. As large an output as is consistent with its standards of quality should be maintained, but the quality should never be sacrificed for an imagined profit to be made by speeding up some process beyond the safety point. Long staple cotton is delicate stuff, and must be treated accordingly. Don't treat it rough, and don't hurry it too much in the picking and carding, and you will be more than rewarded in the spinning, weaving and finishing departments.

M. C. (Mass.)

Some Questions for Weavers.

Editor Cotton:

In my opinion the ball bearing rocker shaft box appearing in the February number of Cotton is good. I am now planning to overhaul my rockers and have asked my superintendent to get a sample and prices of this box before proceeding with the work.

I should also like to ask a question in your (or our) paper, namely:

What is the best method of closing up the pin holes, making a closer weave on 6, 7, and 8-ounce duck and the most practical way of increasing the breaking strength in the filling? My filling has the Draper standard twist. What harm, if any, does paraffin wax do to the yarn when used in large quantities in the size, say about 60 pounds to a kettle of 150 gallons?

Contributor No. 13.

Contraction of Yarns in Spinning.

Editor Cotton:

In reply to a correspondent regarding the contraction of yarns in spinning, would say that contraction of yarn is caused in a variety of ways. Wet twisted yarn, we all know, will contract more than dry twisted yarn; also, long cotton will contract more than short cotton, and therefore the same number of yarn made of short cotton will require more twist per inch than long cotton will; or, in other words, short cotton requires more twist to the number than long cotton to make it weave and spin equally as well. The more twist there is in yarn the more the contraction. Wet weather causes yarn to contract more than dry. There are hardly two spindles on the same frame which are spinning the same numbers from the same cotton, and the same roving. Why? Because there is a variation in the size of the sliver from which the thread is made. What causes all of the variation from the time the cotton enters the card until it leaves the bite of the roll on the spinning frame? There is more or less slipping of rollers going on, which has a tendency to make more or less uneven yarn, hence the cause of uneven contraction. We will say right here that the worst place, in our opinion, is at the intermediate speeder, with a poor, careless hand to run it.

Now all this mischief has a good deal to do with the contraction of the yarn at the spindle, therefore I will say that the contraction has nothing to do with the product as that product in question is figured by the pounds, multiplied by the number of the yarn and divided by the spindles run to get the production minus the contraction.

It is claimed by your correspondent that there is a loss of 10 per cent between the spinning and the finish ordinarily. This is absurd, but the correspondent may have quite a number of processes that his yarn has to go through before it gets to the finish. For instance, he may be situated in a yarn mill where he may have single spooling and single twisting, and even some other disadvantages which all lead to too much waste, and if he gets along year after year with a loss of only ten per cent, he may congratulate himself as doing first-rate, for there are not many mills in New England that are doing as well.

In my opinion, the man that runs a room today within six per cent of the theoretical production, including contraction, is doing well.

Here is a test of seven full bobbins of No. 16.62 yarn made from low grade stock and waste worked in with good bands, spindles, etc., and with 20.66 twists per inch:

301¾ inches of twisted yarn—contraction 3.91 per cent.
205¼ inches of twisted yarn—contraction 5.98 per cent.
301 inches of twisted yarn—contraction 4.15 per cent.
302 inches of twisted yarn—contraction 3.83 per cent.
300 inches of twisted yarn—contraction 4.46 per cent.
298¼ inches of twisted yarn—contraction 5.02 per cent.
307½ inches of twisted yarn—contraction 2.08 per cent.

This is the outside contraction and gives us an average of 4.20 per cent.

Now the following is a test of seven empty (inside) bobbins of the same spindles and roving, under the same conditions as the foregoing except that it sizes just No. 16:

302½ inches of twisted yarn—contraction 3.11 per cent.
308¼ inches of twisted yarn—contraction 3.81 per cent.
308½ inches of twisted yarn—contraction 3.73 per cent.
304½ inches of twisted yarn—contraction 5.06 per cent.
309¾inches of twisted yarn—contraction 3.34 per cent.
313½ inches of twisted yarn—contraction 2.17 per cent.
311¼ inches of twisted yarn—contraction 2.27 per cent.

This, it will be found, will give us an average of 3.54 and, besides being pretty even, is just two-thirds of one per cent less than the full bobbin which goes to show less twist on the empty bobbin than the full one. Now these tests have been made in a practical manner. It is as well to give the correspondent a rule whereby he can work his drafts for getting his numbers. The following rule can be relied upon provided he always knows the exact contraction there is to be in the numbers that he is going to spin.

In figuring out the foregoing rule we will take the yarns and rolls that this correspondent has given us, viz., 70 crown, 84 back, 25 on front roll; 1 inch front, ⅞ inch back, 1.18 hank roving, what draft gear is required to spin No. 8 yarn? Let him remember always that he is to furnish his own contraction in order to work this rule; which is as follows: $84 \times 70 = 5{,}880 \times 8 = 47{,}040$; $47{,}040 \times 1.30$ (hank roving with 11 per cent added for contraction to the yarn) $= 61{,}152$. Then $25 \times 7 = 175$; then again $61{,}152 \div 175 = 349.44$ which is a constant so long as the hank roving and the rolls and the contraction remain as before stated; then $349.44 \div 8$ (which is the number of yarn he wishes to spin) gives an answer of 43.68, which

is the draft gear, which will give a draft of 6.15 theoretically, which if we multiply by the hank roving, 1.30 which is actually 1.30 after adding the 11 per cent for contraction. This will give a number 7.99 yarn which is heavy enough for all practical purposes and his employers will have no occasion to find any fault.

The correspondent will no doubt ask why I use 11 per cent for a multiplier when I advocate only 9.94. It is because I presume he is using a good class of stock and making a good class of goods that he would get a more even contraction from. It is a well known fact that circumstances alter cases and they must be conformed to. With low waste mixed in it would be about 9.94. Now the accuracy of the foregoing rule depends entirely and wholly upon the percentage of contraction required.

W. B. (Me.)

A Home-Made Shafting Oiler.

Editor Cotton:

Having found an overhead oiling pump of value in our plant and thinking that it might prove of advantage to some of the readers of the "How Other Men Manage" department of Cotton I am passing it along. This is just a little device for oiling the overhead shaft, the advantage of which is that it can be operated from the floor, thus eliminating the dangers of the ladder and of the set screws catching a fellow. If any reader wishes to construct one of these pumps for his own use he would have to put a strap around his pump, around the can and then around the pipe for a brace.

Figure 1 shows the can for holding the oil. Figure 2 shows the pump for forcing oil through the pipe, Fig. 3.

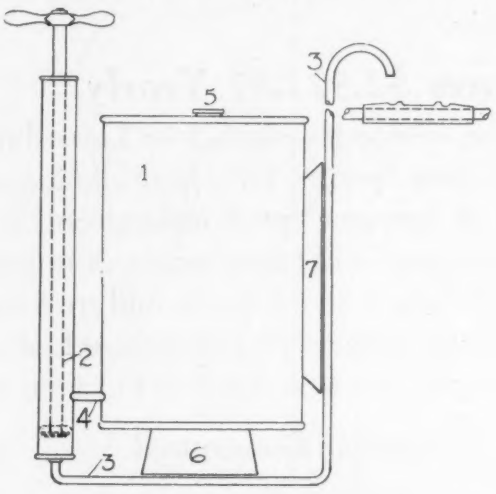
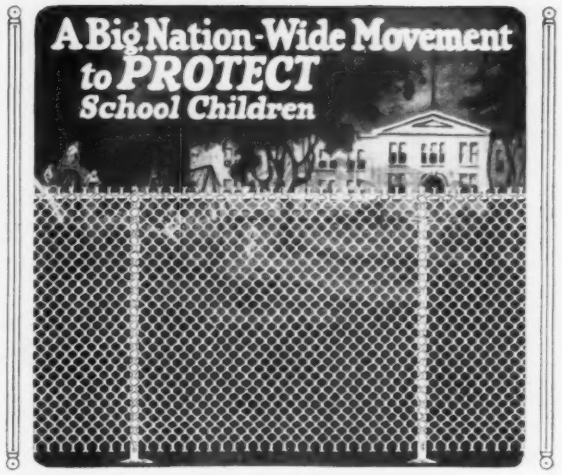


Figure 4 shows the inlet or suction pipe. Figure 5 is the plug in the top of Fig. 1, which is for the purpose of filling the can with oil. Figure 6 illustrates a block of wood with a slot sawed V shape for a brace for the pipe, Fig. 3. Figure 7 answers the same purpose as does Fig. 6.

The can for holding the oil may be made from an ordinary can; however, it would be better to have a can made from about 28 gauge sheet metal that is galvanized. A screw cap could be obtained from the top of a kerosene can. Figure 2, which is the pump for forcing oil through Fig. 3, can be made by taking an automobile pump and cutting it



"Make Education Safe!" That is the slogan today of parents and educators throughout America. School authorities in the larger cities, smaller towns and rural districts are taking action, protecting children from traffic accidents by enclosing school grounds with Cyclone Fence. It's the only safe way. Shut the playgrounds off from the traffic-crowded streets!

Cyclone Fence keeps out vagrants and vandals after school hours and during vacation periods. Protects school property.

Cyclone "Galv-After" Chain Link Fence is now made entirely of Copper-Bearing Steel, noted for its great resistance to corrosion. It's the only All-Copper-Bearing Steel Fence, the fence of maximum endurance. Cyclone Wrought Iron Fence is also suitable for school purposes.

The Cyclone Fence Company will plan and erect the fence and assume entire responsibility for the completed installation. Write, phone or wire nearest offices for complete information.

Over 500 school and playground installations in six months

Cyclone Fence Installations for schools and playgrounds include the following:

Greater New York	200
Cleveland	30
Detroit	65
Milwaukee and Racine, Wis.	25
Omaha	34
Salt Lake City	12
St. Louis	6
San Francisco, Berkeley, Oakland & Los Angeles	48
Tulsa, Okla.	20

CYCLONE FENCE COMPANY

Factories and Offices:

Waukegan, Ill. Cleveland, Ohio
Newark, N. J. Fort Worth, Texas

Pacific Coast Distributors:

Standard Fence Co., Oakland, Calif.
Northwest Fence & Wire Works, Portland, Ore.

The Mark of Quality Fence & Service

Cyclone "Red Top" Fence and Products

Cyclone Fence

CYCLONE COPPER-BEARING STEEL ENDURES

(C) C. F. Co. 1926

Duplicate this record of savings in Your mill

Lestershire *Vulcanized* Fibre Spools

will save money for you. Make a comparative test by equipping one of your machines with Lestershires.

Reduce direct labor costs.

Eliminate your spool replacement expense.

Eliminate loss of yarn due to spools (in many mills this loss runs into thousands of dollars).

Eliminate all possibility of injury to employees from rough or slivered spools.

Increase about 10% the yardage on your spools.

Eliminate warper kinks and knots due to spools.

Eliminate broken ends on your warpers due to spools and thus increase warper production 20% to 30%.

Materially improve the quality of your warps; and thus better the quality and increase your production generally.

THREE years ago the mill in question bought their first Lestershire *Vulcanized* Fibre Spools. Careful check was kept on performance. Results were so satisfactory that wooden spools as they wore out were replaced with Lestershires. This company now

Saves $2,523.87 Yearly

through the economies effected by Lestershire *Vulcanized* Fibre Spools. They have eliminated the waste of frequent spool replacements, of yarn thrown away on broken spools, of unproductive labor hours. Spools in this mill are given the usual rough usage—yet today these Lestershires are as *good as new*, and will be indefinitely.

Satisfaction Guaranteed

LESTERSHIRE

TRADE FIBRE SPOOLS MARK

SPOOL & MFG. CO.

Southern Office: 519 Johnston Building, Charlotte, N. C.
146 Baldwin St., Johnson City, N. Y.

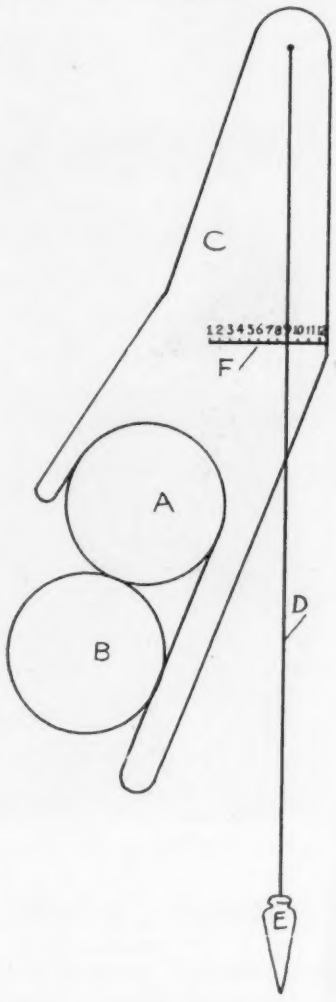
off to make it the right length. Solder Fig. 3, which is of ⅛-inch pipe, into the bottom of the pump. Solder Fig. 4, which is a very short piece of ⅛-inch pipe for the purpose of letting the oil into the pump. The length of the pipe for the oil can be made to suit the conditions in each individual case. W. H. H. (Ga.)

A Feed Roller Gauge for the Comber.

Editor Cotton:

Among the mill men using combers who read and correspond in your "How Other Men Manage" department, there may be quite a number who use Platt's Heilman comber, and possibly the feed roller gauge illustrated in the accompanying sketch will be new and useful to them.

The idea of this gauge is to enable one to set the top feed roller perfectly parallel with the bottom feed roller.



Before beginning to use the gauge, I used to set the top feed rollers by sight, but I made up this gauge and now use it, realizing that any inaccuracy in this setting could produce bad work by giving an uneven tension on the edges of the lap.

This gauge can be made very easily from brass or iron sheeting. Referring to the sketch, *A* and *B* represent the

TIME

~the greatest element in modern production!

IN these days of keen competition, automatic machinery and special material handling equipment are profit-making necessities. They save TIME—and time saved increases profits.

But the maximum benefit of special machines and conveyors comes only when they operate at their highest efficiency every hour in the day. They must be *flexible*—capable of running at many different speeds. For the most efficient operating speed of any machine is different for every different job.

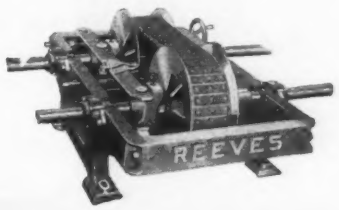
The experiences of thousands of manufacturers in every industry have proved that there is only one truly *accurate* method of scheduling production and controlling the speed of their machines and conveyors—the REEVES Variable Speed Transmission. With this simple, inexpensive device, they can get *any* speed on any machine at *any* time. Their machines and conveyors operate *always* at highest efficiency.

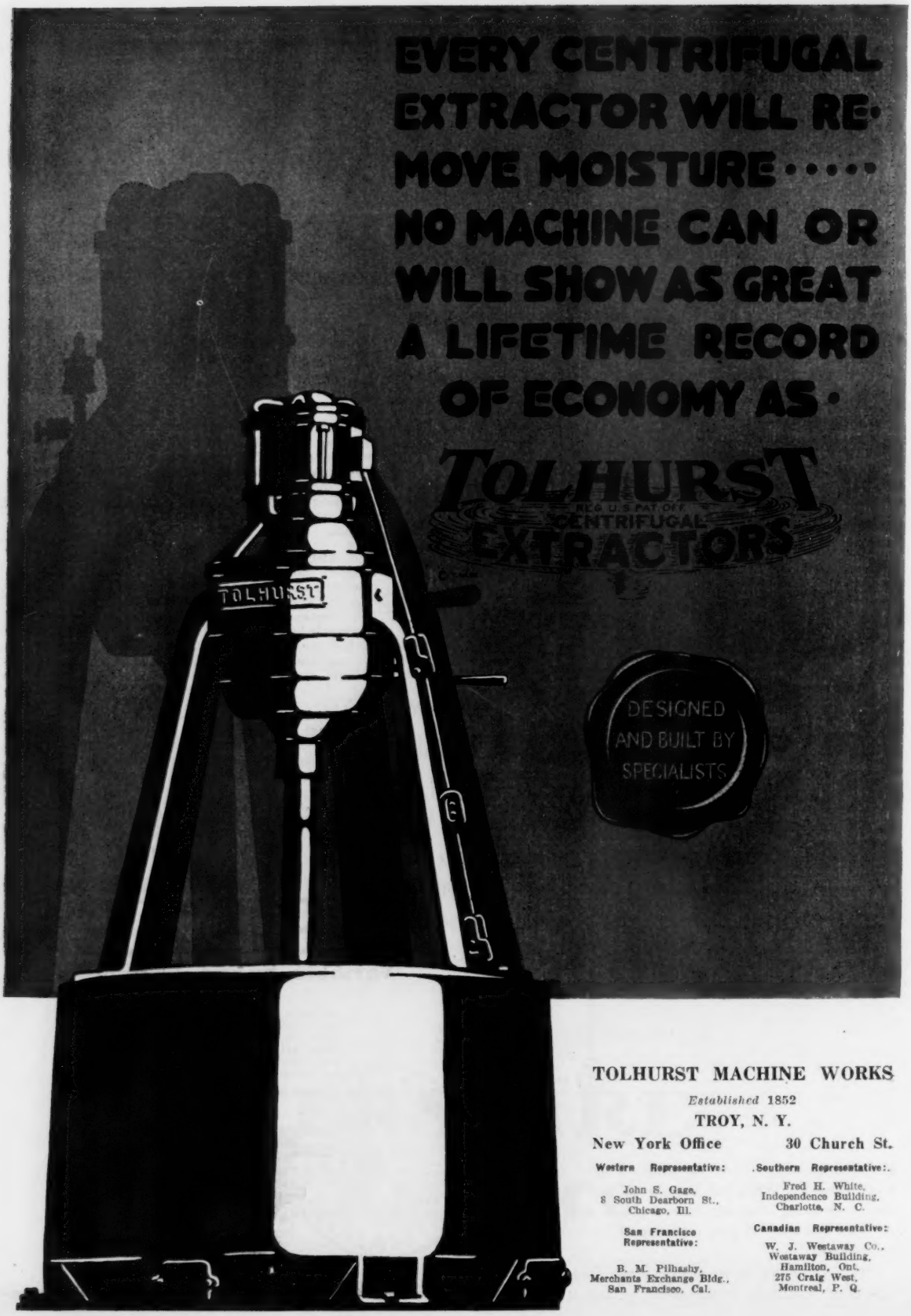
Write today for catalog C-57 and full information about the REEVES in the textile industry. TIME is the greatest element in modern production, and you should get the maximum results from your time-saving equipment.

REEVES PULLEY COMPANY
Established 1887
COLUMBUS, INDIANA

REEVES
Variable Speed Transmission

The REEVES Transmission is a simple, compact mechanical device which receives power at a constant speed and delivers it at any speed desired to any machine or group. It will maintain one speed indefinitely, or may be changed instantly.




EVERY CENTRIFUGAL EXTRACTOR WILL REMOVE MOISTURE.....
NO MACHINE CAN OR WILL SHOW AS GREAT A LIFETIME RECORD OF ECONOMY AS
TOLHURST
REG U.S. PAT. OFF.
CENTRIFUGAL EXTRACTORS
TOLHURST
DESIGNED AND BUILT BY SPECIALISTS

TOLHURST MACHINE WORKS

Established 1852

TROY, N. Y.

New York Office 30 Church St.

Western Representative:

John S. Gage,
8 South Dearborn St.,
Chicago, Ill.

San Francisco Representative:

B. M. Pilhashy,
Merchants Exchange Bldg.,
San Francisco, Cal.

Southern Representative:

Fred H. White,
Independence Building,
Charlotte, N. C.

Canadian Representative:

W. J. Westaway Co.,
Westaway Building,
Hamilton, Ont.
275 Craig West,
Montreal, P. Q.

top and bottom feed rollers. *C* is the gauge, attached to which is a line and plumb-bob, *D* and *E* respectively. *F* is a gauge or scale, which is numbered.

By placing the gauge on the rollers in the position shown, all the rollers can be set alike in whatever position has been found best in connection with the other settings, and toward the end of good work.

CONTRIBUTOR No. 4403.

A Comment on "Some Other Things."

EDITOR COTTON:

I started to say that I was writing this in answer to "Contributor No. 4309," whose letter appeared in the January number of COTTON, but after reading it over very carefully I find that he has asked no questions for me or anyone else to answer. His letter is headed "Uneven Tension and Some Other Things," but I find nothing at all to enlighten us on uneven tension. There are plenty of other things, however.

He also states that he is running three stocks, all different, on one intermediate, and no trouble. What is wonderful about that? He is using the same draft, twist, tension, roll setting, etc., on three different stocks. Therefore, they must all be the same length of staple, hank roving and all. Now if he were running something like the following on this intermediate, and was getting away with it, I'll say he certainly would have something to crow over: Sulphur black double carded 3/4-inch staple 2.00 hank roving; combed peeler 1-inch staple 4.00 hank roving; single carded white 1 1/4-inch, staple, 6.00 hank roving.

He seems to have an aversion to presidents, agents, stockholders, and father's sons. As regards the latter, he must evidently be a self-made man. As regards the first three, show me an industrial organizations without them. We have a president and stockholders, and when they pay us a visit we certainly do have 'er shined up, and take a certain amount of pride in so doing. As to the company's agent, if we have one I don't know who he is or where he stays or anything else about him. But I can say this much for him, he certainly does keep the thing on the tight pulley.

But, getting back to the card room. I don't know whether our card rooms are next to heaven or not. We are on the third and fourth floors. However, we must be pretty close to heaven at that, as there are some operatives who were here when the first dirt was turned for the foundation of the mill, and whenever any of the help leave they don't stay away long.

As regards the tension on our fly frames, we change the gears twice a year—Spring and Fall. And do they run? I'll say they do. Our frame hands are on piece work, the same as his, so we get a good day's run also. We have to have production, and if we don't get it somebody gets promoted.

I have been following the discussions in this department for some time, with refrence to tight and loose gauges, and would like to hear from "Contributor No. 4309" on this question. One man says there is no such thing as a tight or loose gauge. Now why isn't there? True we have the gauges to go by, but one cannot always set exactly to the gauge, because conditions won't allow it. If our card room were on the ground floor we would have no vibration. Therefore, our doffer and flats could be set to a 5 and 9 respectively. But, as I stated before, we are on the third

Century
TRADE MARK REG. U.S. PAT. OFF.
BRASS WORKS INC.

Sanitary Ice Cooled Drinking Fountains for Textile plants are for year around use, and particularly in hot weather they promote and maintain the efficiency of workers.

Many leading corporations are installing this type of fountain to replace circulating ice water systems. Their experience should mean much to you.

Under actual working conditions Century Coolers have been shown to require less than one pound of ice a day per person. They are made in a large variety of sizes. Prices $44.00 to $91.00. Let us assist you in determining the correct size coolers for your plant. Send for new catalogue, just off the press. It gives complete specifications.

Century Brass Works, Inc.
501 N. Illinois St., Belleville, Ill.

Well-planted grounds make

Comfortable Homes

That seamy edge of newness, that look of barrenness, that rawness, are all banished by a few trees and shrubs judiciously placed.

It is not always a matter of years; our skilled Service Men can plan and plant so wisely, using material so well adapted to its purpose, that one season's growth gives the home an air of comfort, permanence, and mellowed age.

Late spring and early summer planting should be planned at once, otherwise valuable time will be lost. Our representative will be glad to discuss plans and plants with you.

The Howard-Hickory Co.
Nurserymen—Landscape Gardeners
Hickory, North Carolina

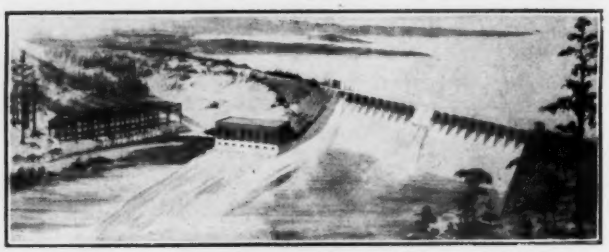
Hydro Power a Success Factor at

COLUMBUS, GA.

EXACTING REQUIREMENTS of the textile industry have so influenced the development of the Columbus Electric & Power Company that troubles resulting from unreliable power service are practically unknown in Columbus industrial plants. During the recent unprecedented drought, the company demonstrated its keen sense of obligation to its patrons—spending over seven hundred thousand dollars to keep the wheels of its customers turning through a period when other sections of the South-east were losing millions of dollars by curtailment and the enforced shutting down of factories for lack of power.

A steady program of expansion and improvement keeps the power service *always ahead* of the needs of industry in our territory. This policy, and a peculiar combination of natural and developed advantages, have given Columbus the unique distinction of not having a factory failure or a removal for more than sixty years. May we tell you what other advantages Columbus offers *you?*

Bartlett's Ferry Hydro Power Plant



This improvement has just been completed at a cost of over eight million dollars. It is now developing 40,000 h.p., but has capacity of 80,000. Its storage capacity is sufficient to control the flow of water over any ordinary drought period.

Our Power System

The power resources of the Columbus Electric & Power Company is your guarantee of uninterrupted service. They are:

Bartletts' Ferry Dam, 80,000 h. p.
Goat Rock Dam, 40,000 h. p.
North Highlands Dam, 12,000 h. p.
City Mills Dam, 1,200 h. p.
Eagle & Phenix Dam, 4,000 h. p.
Reserve Steam Plant, 12,000 h. p.

—and other developments that may yet be made along the Chattahoochee rapids in the Columbus district.

Columbus Electric & Power Co.

Columbus, Georgia

West Point—LaGrange—Hogansville—Newnan

Executive Management STONE & WEBSTER, Inc.

and fourth floors, and have a considerable floor vibration to contend with. Therefore, we cannot set to these gauges. We must let out to a 7 and 10 for the cards on the third floor and set those on the fourth floor to a loose 7 and 10. Why? Vibration. We have weave rooms on the first two floors and the spinning room on the fifth floor. One may stand in the middle alley on the third floor and feel considerable vibration, and go up on the fourth floor and feel it more. That is why we have to set to loose gauges, and I guess it must be practical, as we have been doing it for several years and have been getting the required amount of strips and fly waste and haven't ruined the company or any card clothing either and are getting good work to boot.

In closing, will say that I agree with "Contributor No. 4309" on the point of labor agents and welfare workers, whose own welfare is all that concerns them. Why pay a man or woman a large salary to do something that a superintendent or overseer can do better, because he is on the inside and knows his needs better than anyone else? However, we have several welfare workers in our mill. They start with the superintendent and work on down through the overseer to the time keeper and pay master. We have one of the finest community clubs in the South, and that isn't our "say-so." Ask anyone who has been here. So it can be seen that our welfare workers are certainly upon their jobs. R. H. (Ga.).

Wants Rule for Figuring Reed, Etc.

Editor Cotton:

I should like to have some overseer of weaving or designer to give me the following information, which is desired in order to make a piece of army duck cloth, to be 30 inches wide; weight. 12.4 ounces per yard; 47 1/2 sley × 30 pick filling per inch.

What is the rule or formula for figuring the reed, number of warp and filling, and the contraction on this class of goods? This information would be greatly appreciated. E. T. (S. C.).

Card Stripping.

Editor Cotton:

Continuing the discussion in "How Other Men Manage" I note, in the February issue, that the comparison is between the high vacuum system and the old method of using a stripping roll which is carried from card to card.

The writer would like to call your attention to a system which has been in operation for six years and gives satisfaction, for it overcomes practically all the evils and makes use of the best features in both systems.

This system uses a brush and a small amount of air to take away the strips and dust. The strips and dust are separated in the condenser located in any convenient place for the mill. The piping is large enough and with the velocity of air there is no curling of the stock.

The strips are dropped in excellent shape for use or market and the dust is blown to the dust cellar. It is economical to operate for one man does the stripping and, in some cases, a card tender strips his own cards. There is no trouble with bad ends on the stripping roll, for there is a brush on each card which is in correct alignment, well-covered, and is only removed at the time of grinding and placed in stands on the card made especially to receive it.

The brush burnishes the wire and keeps it clean at all times. There is no excuse for hooking or dulling the wire on the cylinder and doffer as the band is put on while the brush is in neutral position between the cylinder and doffer.

The brush is put in the cylinder and doffer only when the speed of cylinder and doffer is right for stripping. There is very little air used and only to remove cotton from the brush. As the air is not directed to the fillet, there is no danger of raising the foundation of the clothing. As the brush is well-covered it has all the safety features of the high vacuum system, but does not have the disadvantage of blowing out through the slot when the nozzle is not left in the proper position. I. L. (Mass.)

What's the Matter With This Spinning?

Editor Cotton:

I am having some difficulty with my spinning, and would appreciate information from some of your readers regarding it. I am using a 39-inch Whitin spinning frame, 8-inch cylinder, 1 1/8-inch whirl, 3 1/4-inch gauge with separators. I use a 7-inch traverse, and 2-inch No. 2 double flange ring, making 13s warp yarn with a regular warp build. I use a 1-inch staple cotton. My processes are as follows:

Two processes of pickers produce a 12-ounce lap; 57-grain card sliver; two processes of drawing, doubling 6 at the back; 1st and 2nd drawing sliver weights, 60 grains; .68-hank slubber roving; one process speeders make 2.00-hank roving.

This 2.00-hank roving is run single on the spinning frame making 13s warp yarn, with 16.9 turns per inch of twist. The draft is 7.5. The front roll speed is 151 r.p.m. The spindle speed is 8,317 r.p.m. As the standard front roll speed for Whitin frames for 13s is 147 r.p.m., and the standard spinning speed for this number is 7,950 r.p.m., you will notice that I am running my front roller four turns faster than standard and my spindles 367 revolutions faster than standard.

Also, I can't get a traveler to suit this speed. If I put on a traveler to hold the balloon down, when the frame gets nearly full it will pull the ends down after the frame is doffed. And if I use a traveler that won't pull the ends down when the frame first doffs, they will balloon so much when the frame gets full that they will lash down then. I am using a National square point traveler. I have been using a No. 7 and No. 8 traveler, with a No. 3 circle. The No. 7 travelers seem to run better as a whole than the No. 8, and, as stated, the No. 7 traveler lets the ends lash down, when the frame gets full, and the No. 8 traveler pulls the ends down when the frame is just doffed.

I have done a little experimenting with the travelers, changing the circle. I am now trying out some No. 7-2 circle travelers, and they run better than the No. 7-3 circle. I think this has reduced the trouble materially, but feel that my end breakage is still excessive, and shall appreciate any information which you can secure for me through the "How Other Men Manage." O. P. (N. C.).

Naturally, there are a good many local conditions that affect the choice of a pump, but there must be some reason why so many engineers insist that no matter what the *type* of centrifugal used—it must bear the name plate of The American Well Works.

The American Well Works

General Office and Works - - Aurora, Illinois

BRANCH OFFICES:

Chicago, Ill.	First National Bank Bldg.
Milwaukee, Wisc.	Wisconsin National Bank Bldg.
New York, N. Y.	165 Broadway
Dallas, Texas	Western Indemnity Bldg.
San Francisco, Calif.	635 Mission St.

DISTRICT SALES AGENCIES:

Philadelphia, Pa.
Pittsburgh, Pa.
Cleveland, Ohio
Detroit, Mich.
St. Paul, Minn.
Omaha, Nebr.
St. Louis, Mo.
Kansas City, Mo.
Joplin, Mo.
Atlanta, Ga.
Birmingham, Ala.
Jacksonville, Fla.
New Orleans, La.
Roswell, N. Mex.
Denver, Colo.
Salt Lake City, Utah
Phoenix, Ariz.
Los Angeles, Calif.
Charlotte, N. C.
Boston, Mass.
Calgary, Alta., Can.

Using Hank Clocks to Pay for Spinning.

Editor Cotton:

Replying to the contributor who asked in March Cotton about paying spinners and doffers by piece work on the hank basis, I will say that we have had hank clocks on our spinning frames for a number of years. We have never started paying the spinners by the hank, but have been paying our doffers this way for three or four years, and find it extremely satisfactory. In fact, when we started paying them by the hank, we increased our production two to three per cent.

In reference to the first question—as to what system we use in having the hank clocks read daily—I will say that we have hank sheets large enough to put the frames on each section on one board. The section men take these boards a few minutes before stopping time on each shift—as you know, we are running day and night—and take the readings from each frame. This takes about ten or fifteen minutes for each section man, but as most section men are generally cleaned up and standing around waiting for stopping time, we do not think that we are really losing any work from them, and especially when we consider the gain we get, we know that we are not losing anything.

In reply to the second question—"Who reads the clocks?"—I have answered that already; namely, the section men.

The third question is, "Do you read each clock every day and pay the spinners accordingly, or do you compute the hanks on an average?" We read the clocks every day, as I have indicated, and pay the doffers by the actual number of hanks run, and do not compute the hanks on an average. We think that to compute the hanks on an average and pay accordingly would absolutely ruin or spoil any good results secured from the hank clocks.

"How do you pay spare spinners?" is the next question. We do not pay spinners by the hank, as stated, but we do pay doffers, and pay each doffer simply for the number of hanks which the frames he doffs gets off on the day he doffs them. This allows us to get from a spare doffer just as good work and production as we get from a regular doffer. And we might add that we have been paying our weavers by the pick for two or three years, through the use of pick counters, and we pay the spare weavers also by the pick, and find it works very satisfactorily. I do not see why there would be any difference in paying a spare weaver by the pick and a spare spinner by the hank.

As to how long it should take a timekeeper to compute the hanks on 400 frames each day, I do not see why a good timekeeper cannot make these calculations easily in 1½ hours. This is only about four calculations per minute, and that should be done easily, as it is only subtracting two figures.

Of course, you understand that to pay spinners by the hank it is necessary to put the spinners to spinning around a frame instead of on just one side, and we have found it an advantage to give the spinners the frames all together instead of skipping alleys, as we used to do when we had them all on one side of a frame. This reduces the amount of walking that the spinner has to do, and by putting one spinner to the frame, the spinner knows that she gets everything that is gotten from that frame, and will therefore put in more than she would if she had to divide what she

BLOXONEND FLOORING

Bright Clean Durable

A FLOORING that combines block durability with dressed and matched floor smoothness. *That's* Bloxonend. It comes in 8 ft. lengths—the tough end grain forming the wearing surface. Laid directly over old or new concrete or wood floors.

For mills, machine shops, docks—wherever smooth, clean, durable floors are required—Bloxonend merits your consideration. It outwears any number of ordinary hardwood or concrete floorings. Representative users include Viscose Company, Dennison Manufacturing Co., Cleveland Worsted Mills.

Descriptive Booklet "R" contains complete detailed information. Write for a copy.

CARTER BLOXONEND FLOORING CO.
KANSAS CITY, MISSOURI
(World's largest lumber market)
Representatives in principal cities

BLOXONEND
Lays Smooth—Stays Smooth

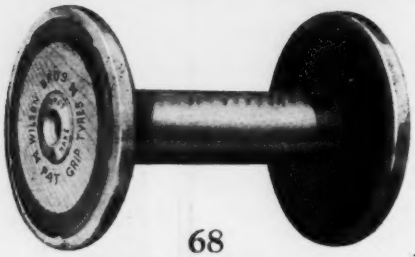
WILSON BROTHERS BOBBIN Co LTD

BOBBINS & SHUTTLES
for the TEXTILE TRADE

TRADE MARK WB

TRADE MARK WB

Telegrams
Nugget
Liverpool



Codes
A.B.C. A.1
& Marconi

68
Highest Awards
Including
8
Grands Prix

CARDROOM TUBES,
RING BOBBINS,
WINDING BOBBINS,
PIRNS, &c., &c.

LARGEST MAKERS IN THE WORLD

WILSON BROS. BOBBIN CO., Ltd.

Garston LIVERPOOL,
ENGLAND

& at Todmorden

got with another spinner. P. S. (S. C.).

EDITOR COTTON:

In regard to the inquiry as published in March COTTON as to how to pay spinners and doffers by piece work on the hank basis; what system is used in having the hank clocks read daily; who reads the clocks and how the hanks are computed; how spare spinners are paid on this system, and how long it should take a timekeeper to compute the hanks of 400 frames each day. Taking each of these questions in order, will say:

First. Each section man reads the hank clocks on his section and sets the readings down on a hank sheet similar to this form:

No. of Frame	Start	Mon.	Tues.	Wed.	Thur.	Fri	Sat.	Total
Hanks	7	7	7	7	7	7	3	38
192	164	143	150	157	164	171	174	

Each section man has 52 frames. Therefore, by starting to read the clocks about 15 minutes before stopping time, he has time to complete his readings by stopping time. When the section man reads the clocks he does not set down the tenths of hanks, but takes a half hank and under, and gives a hank for all over five-tenths.

Second. We believe that the foregoing answers the next question as to what system we use in having the clocks read daily.

Third. We believe that it also answers the third question, "Who reads the clocks?"

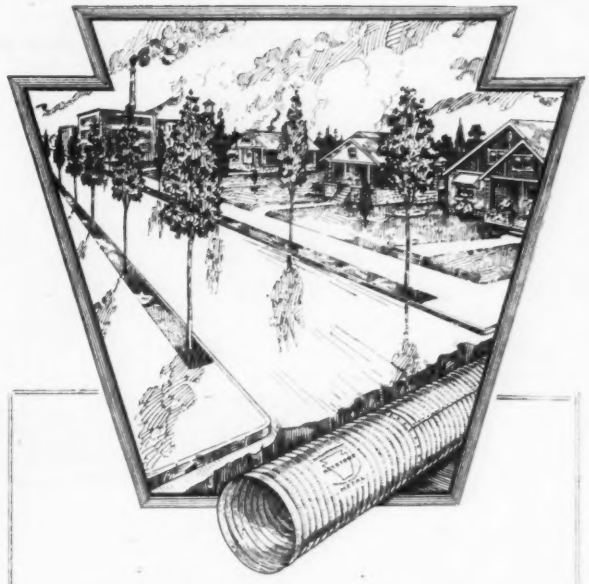
Fourth. We do read the clocks every day, and pay our spinners according to the number of hanks run. We do not compute the hanks on an average, but pay our spinners on the actual number of hanks they run.

Fifth. We pay spare spinners according to the reading of the hank clocks; that is, providing they are on the frames for a full day. If they only run, say five frames three hours (I might say here that the spinners at this plant take both sides of a frame, thus a ten-side spinner would have five frames) and another spinner runs the five frames for seven hours, then we take the number of hanks that are run that day and give the spinner that ran the frames three hours three-tenths of the hanks run and the spinner that ran the sides seven hours seven-tenths of the hanks run. In paying spinners by this system, we always pay for just what is run, regardless of whether it is a spare spinner on the frames or the operative who has those frames regularly.

Sixth. We think a timekeeper who is fairly good in mathematics should be able to compute the hanks on 400 frames each day and have the total number of hanks each spinner has run that day totaled and ready to transfer from the hank sheet to a time book or payroll sheet in about one and one-half hours.

The only thing that a timekeeper would have to do after a section man has taken the readings would be to subtract the number of hanks shown on the hank sheet at the last reading from the number shown at the present reading, which would give him the number of hanks a spinner ran on that frame for that day. Using the same method, the timekeeper would find the number of hanks the operative ran on her other frames, then totaling the number of hanks she ran on all of her frames for that day would be the total hanks she ran for that day, ready to transfer to the time book or the payroll sheet.

While we are on this subject of paying spinners by the hank, will say that we also pay doffers by the hank. A



Perfect Drainage
—Against Odds

DESPITE the attacks of ice, floods, and traffic, Keystone Culverts meet every drainage problem in the most efficient way—without deteriorating.

Made from Keystone Copper Steel —America's finest sheet mill product—they possess permanence far greater than that of wood, vitrified sewer pipe, cement, or concrete culverts.

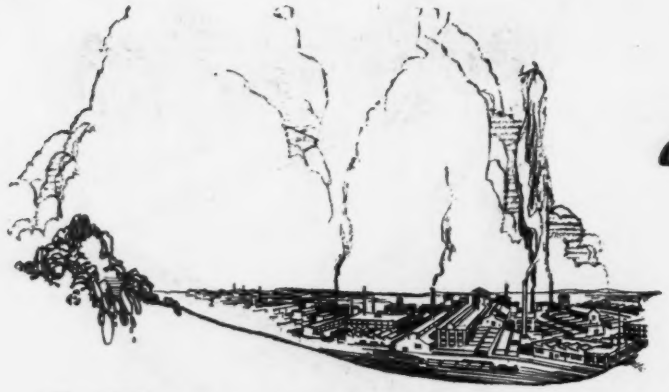
The low first cost, ease of transportation and installation, and power to resist collapsing loads, have convinced many mill village owners of the excellence of Keystone Culverts.

They meet every requirement of the State Highway Commission and the U. S. Government.

Carolina Metal Culvert Co., Inc.
Salisbury, N. C.

KEYSTONE CULVERTS

What this concentration of resources means to dyestuff users



NEVER before in the history of the industry have dyestuff consumers been offered a service such as this. It has been made possible only by pooling the accumulated experience of dye manufacturers who have always rendered the best service to dyestuff consumers.

Some of these dyestuff manufacturing plants were founded almost a century ago, and there is available the sum of the skill and experience of these leaders.

Quality dyes such as marketed by this company are the result of intensive and continuous research and assure the textile industry of dependable dyes unsurpassed in fastness properties.

GDC

We offer the products manufactured by

GRASSELLI DYESTUFF CORPORATION
ESSEX ANILINE WORKS, INC.
BEAVER CHEMICAL CORPORATION
(Alizarine Products)

and the dyestuffs manufactured by

I. G. FARBENINDUSTRIE AKTIEN-GESELLSCHAFT in their several factories
BADISCHE ANILIN & SODA FABRIK, LUDWIGSHAFEN, GERMANY
FARBWERKE vorm. MEISTER LUCIUS & BRÜNING, HOECHST a. M., GERMANY
FARBENFABRIKEN vorm. FRIEDR. BAYER & CO., LEVERKUSEN, GERMANY
LEOPOLD CASSELLA & CO., G. m. b. H., FRANKFURT a. M., GERMANY
AKTIEN-GESELLSCHAFT FÜR ANILIN FABRIKATION, BERLIN, GERMANY
CHEMISCHE FABRIK GRIESHEIM-ELEKTRON, FRANKFURT, a. M., GERMANY
CHEMISCHE FABRIKEN vorm. WEILER-TER MEER, UERDINGEN, GERMANY

GENERAL DYESTUFF CORPORATION

NEW YORK, 230 FIFTH AVENUE

BOSTON, 159 HIGH STREET
PHILADELPHIA, 111 ARCH STREET
PROVIDENCE, R. I., 52 EXCHANGE PLACE
CHICAGO, 305 WEST RANDOLPH STREET
SAN FRANCISCO, 22 NATOMA STREET
CHARLOTTE, N. C., 220 W. 1st STREET

doffer has 14 frames, and if he is paid by the hank he realizes that when one of his frames stops he is losing money; therefore, he usually puts forth more effort than he would if he were paid by the day, and this tends to increase production.

I might also state that we pay our spooler hands by the number of boxes of yarn they spool. That is, we have a box which when full holds 23 pounds of yarn. The operative who distributes these boxes of yarn to the spooler hands punches a card which the spooler hand has. This card bears her name and has numerals running from 1 to 24 on the card; therefore, when he carries her a box of yarn in the morning he punches number one, the next box he carries her he punches number two, etc., during the day. At night the overseer takes up these cards and issues the spooler hand a new card for the next day.

The overseer then transfers the number of boxes each operative spooled, which is shown on their respective cards, to the time book or to the payroll sheet.

At the end of the week, when the overseer turns in his weekly report, he shows the total number of boxes spooled during the week, and also shows the number of pounds of yarn run on the warpers during the week. Therefore, by dividing 23, the number of pounds of yarn in a box, into the number of pounds of yarn run on the warpers, we have the number of boxes which should have been spooled. This serves as a check on the spooler hands, and usually shows more boxes spooled than the total number of boxes paid for. However, there are several things that would account for a small variance.

CONTRIBUTOR No. 4413.

EDITOR COTTON:

In reply to "W. R. (S. C.)" in regard to keeping records of hanks run on the spinning frame:

We run day and night on our spinning, and the hank clocks are read each morning and each night by the supply clerk, and it takes only a few minutes to do this. We have a form printed that has a line for each frame, with columns for each day, and an extra column to subtract the previous hanks to give the hanks run for that day or night. The overseer or second hand who keeps each spinner's time, records each day the number of frames that that spinner has run. All he has to do is to look on the hank board and add up the number of hanks that the frames which that spinner ran have made. This gives an actual record, and is not an average.

It takes only about a half hour each day for our supply clerk to keep record for both day and night runs of spinning. From this board the second hand gets the information for paying the spinners and doffers.

Spare spinners are paid by the side hour and not by the hank. Only regular spinners that have regular sides are paid by the hank. W. J. R. (N. C.).

Uneven Tension on Fly Frames.

EDITOR COTTON:

I have been reading with interest the articles on fly frame tension in the "How Other Men Manage" department. I have two makes of 1917 model roving frames that I will call *A* and *B*, and must say that there is quite a difference in the tension of the two frames—or was, at least, before I rectified it.

When I took charge of this mill, the *A* frames, 10x5,

Better Lubrication at Less Cost per month

Regular Repeat Orders are this lubricant's best endorsement!

There is deep significance in the fact that over 70% of the leading mills throughout the country now use regularly—

TRADE MARK NON-FLUID OIL REGISTERED IN UNITED STATES PATENT OFFICE

MODERN TEXTILE LUBRICANT

These mills place regular repeat orders for NON-FLUID OIL because they get the results they are after—results unobtainable with any other lubricant.

The outstanding feature of NON-FLUID OIL is its adhesive quality—its ability to stay in bearings.

This means that NON-FLUID OIL gives constant and positive lubrication—

And that NON-FLUID OIL keeps in the bearing and off the product—an important point when you consider the loss sustained by many mills through oil-stained goods.

And again, NON-FLUID OIL lasts much longer in the bearing than liquid oil and therefore *costs much less for lubricant.* This is a clear saving for any mill.

To help you get acquainted with NON-FLUID OIL we send free sample and bulletin, "Lubrication of Textile Machinery", on request—write today.

N. Y. & N. J. Lubricant Co.

Please send bulletin, "Lubrication of Textile Machinery" and samples of NON-FLUID OIL for purposes checked below:—

☐ PICKERS ☐ LOOMS ☐ SHAFTING
☐ CARDS ☐ TWISTER RINGS ☐ MOTORS
☐ SPINNING FRAMES ☐ BALL BEARINGS ☐ CHAIN DRIVES

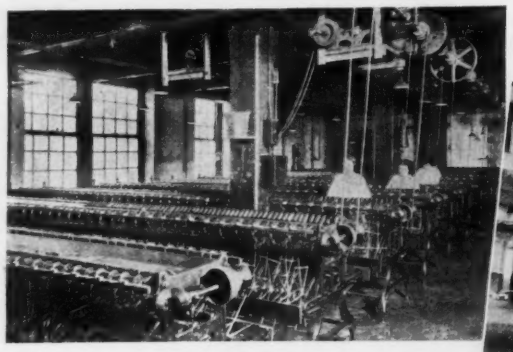
NAME .....

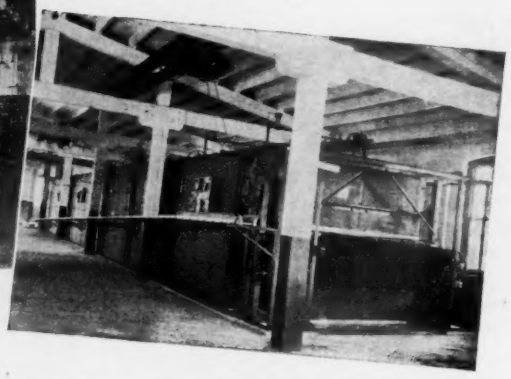
MILL NAME .....

ADDRESS .....

C-4-26

NEW YORK & NEW JERSEY LUBRICANT CO.
MAIN OFFICE: 102 MADISON AVE., NEW YORK, N.Y. WORKS: NEWARK, N.J.
Warehouses:
CHICAGO, ILL. ST. LOUIS, MO. ATLANTA, GA.
PHILADELPHIA, PA. KANSAS CITY, MO. CHARLOTTE, N.C.
PROVIDENCE, R.I. NEW ORLEANS, LA. GREENVILLE, S.C.





Lewellen transmission driving silk throwing frames. At the right, Lewellen transmission driving Proctor automatic yarn dryer.

Labor Savings Alone Paid for the Transmission in One Month

THE Lewellen Transmission driving the silk throwing frames* shown in the left illustration has produced direct savings and improved production that more than paid for the transmission in a month.

Carefully kept records show a net saving in labor of $147 per month of 25 days. This amount is due to preventing breakage, and ending lost time due to breakages. Increases in production and the saving by reducing spoilage are not counted in this amount.

Lewellen Transmissions have proved their value in hundreds of textile mill installations. They give complete, accurate control of the driven machines, reduce spoilage and breakage, increase production. Send for the new Lewellen catalogue and find out what the Lewellen Transmission can do for you.

LEWELLEN
Variable Speed
TRANSMISSION

Lewellen Manufacturing Company
Columbus, Indiana

* *Name and address on request.*

Longer Life —Better Results!

Made to meet every condition in the weave shed our Flat Steel Heddles help the weaver to produce more goods, reduce waste and to save time.

The life of twine harness stands no comparison with Steel Heddles. As to their practicability: D. W. League, overseer weaving, F. W. Poe Mfg. Co., Greenville, S. C. *"We get very favorable results with Steel Harness on tobacco cloths and fancies."*

E. A. Franks, formerly Supt. Drayton Mills, Spartanburg, S. C., now Supt. Dunean Mills, Greenville, S. C.

"I make broadcloth poplins on Steel Harness because I never made any on twine harness. To use twine harness would necessitate an extra width."

New England Office
44 Franklin St.,
Providence, R. I.

Southern Plant
Steel Heddle Bldg.
621-635 E. McBee Ave.
Greenville, S. C.

Foreign Offices
Huddersville, Eng.
Shanghai, China

FLAT STEEL HEDDLES
AND UNIVERSAL FRAMES

STEEL HEDDLE MANUFACTURING CO.

21st and Allegheny Ave. Philadelphia, Pa.

acted like those "G. D. S." told about—they would start up well, but after two or three lays we would have to start taking them up, and then let them out, when they got about two-thirds full. What we did was to change the take-up gear one tooth, which took care of taking the frame up so that we only had to take it up about twice. But the frame would still run tight about two-thirds of the doff until the doff, so we took the top cone out and had about 1/8 inch taken off at the small end and tapered it to about 15 inches along the cone. All we have to do now is to take the frame up once or twice and then it will run to a doff.

We are using a 1-inch cotton, with about 20 per cent comber waste. Oh, yes, the readers might say, it is the comber waste in the mix. All right, but why do the *B* frames run so easily on the same stuff? I don't have to touch them from start to finish, and they are running the same hank roving, and they have the same twist per inch. Also, when changing from 1.00 to 1.35 hank roving, I do not have to change the cone gear on the *B* frames, but do have to change the take-up on the *A* frames. I would like to hear from some more readers on this subject.

Contributor No. 4319.

Some Spinning Room Notes.

Editor Cotton:

The question of H. L. I. (Ga.) in the May, 1925, issue is very interesting, and I hope I can furnish a little useful information on the subject.

The rolls on ring frames are set at an angle of from 20 to 35 degrees; the most common angle, I believe, is 30 degrees. This seems to be the most satisfactory angle for general work. The lesser angles are suited to hard twisted yarns. The greater angles should be used for soft twisted yarns, such as hosiery yarns, etc.

The reason that "H. L. I." was able to greatly increase his roller speed after installing roller stands of 35 degrees was due to the fact that with a greater angle, the end can run right up close into the bite of the rolls.

"H. L. I." is just a little sidetracked when he says he could reduce his twist because the roll was brought closer to the thread guide. It is quite true that a greater angle on the roll stand does bring the front roll closer to the thread guide, but the reason that less twist can be run is because the end runs up close into the bite of the roll.

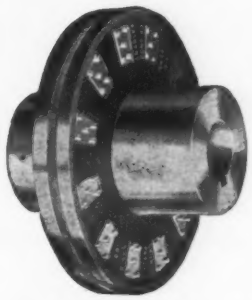
On a spinning frame, the top rolls are, in most cases, leather-covered. In a number of instances plain iron rolls are used on middle and back rolls. The bottom front rolls run in immovable bearings, and the middle and back rolls are adjustable. The rolls are also adjustable to the middle roll.

The distance between the front and the middle rolls should be decided by the length of staple being run, the weight of the roving in the creel, the draft used and the style of top rolls used.

When running fine yarns the rolls should be spread just slightly wider than the length of the staple. When coarse yarns are being spun and the rolls are weighted, a little wider setting must be used.

The smooth iron rolls are used on the back, or if the middle rolls are self-weighted, on fine yarns, the rolls should be spread slightly less than the length of the staple, so that the fibers will draw under the rolls.

For Direct Connecting Motors to Spinning and Twisting Frames



Over 100,000 in Use

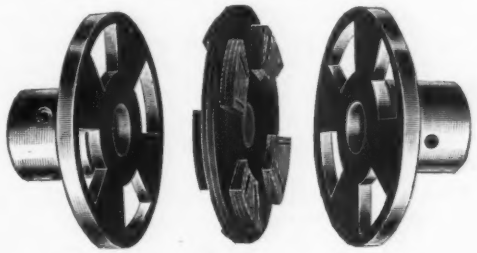
Grundy Couplings are designed to render the utmost in service on all direct drives. They are made according to specifications determined by an analysis of the textile industry. They are made in a variety of sizes, working on any direct drive—with fewer repairs and less attention than any other coupling on the market. Thousands of these couplings are at present in use in various Textile Mills throughout the country. Illustrated folder showing the "Grundy" actually driving Spinning and Twisting Frames will be forwarded upon request.

The following salient features should soon prove to you why

Grundy Patent Flexible Insulated Coupling

should harness your direct drives:

1. Takes care of uneven strains.
2. Self-adjustment insures perfect alignment of shafts.
3. Can be used whether insulation is required or not.
4. Perfectly balanced, and adapted for revolving at high speeds.
5. Runs in either direction; is close connected; easy of access; practically no repairs.
6. There are no projections to cause damage.
7. Maintains a positive and silent drive; free from objectionable hammer action features.



Cast Iron Leather Cast Iron

Write for Booklet "F"

Manufactured exclusively by

CHARLES Bond COMPANY

Leather Curriers, Importers and Belting Manufacturers

617 Arch Street, Philadelphia, Pa.

In cases where rolls are leather-covered they are weighted by saddles, stirrups, levers and weights. A saddle is used on the back and middle rolls, and another saddle rests on the front rolls and the back saddle. A stirrup is hung from the front saddle and the weight is applied to the stirrup by a lever. A weight of from about 2¾ pounds is hung on the lever. (I recently had an article in this department on how to figure total weight on spinning rolls, so it is unnecessary to give the rule again).

For fine yarns, where the middle roll is self-weighted, a saddle rests on the back and front roll only. The middle roll is entirely free of weight.

The front roll only would be weighted when the middle and back rolls are plain iron rolls.

A square should be used to set the front top roll with the bottom roll. The top roll should be allowed to drop well forward. A level square should be used and the head set off at an angle, to allow the roll to drop forward.

The back of the guide wire should be set directly over the top of the spindle, and should be from two inches to three inches above the top of the bobbin. If the guide wire is too close to the bobbin, excessive breakage is the result.

The weight of the traveler used should be just heavy enough to make a firm bobbin and prevent excessive ballooning. When separators are used they should be kept clean and well polished.

The best built bobbin is made when the fast motion acts as the rail is running down. The bobbin will unwind better than when the fast motion acts when the rail is running up. In making the change at the nose of the bobbin from the slow to the fast motion, the extra pull is put upon the yarn when the tension is greatest. This very often causes considerable breakage of ends.

With the slow motion when the rail is running down a softer nose will be made on the bobbin, but the yarn is likely to pull off in bunches when being unwound. The frame will run better with the slow motion running down.

To set the builder, on a Whitin ring frame, for warp wind, first hook the chain in the hole on the rack, then wind the rack right back to the starting point. The warp cam should then be put on and turned so as to bring the roller to the highest point. This will bring the rail to the bottom. The position of the rail can then be easily adjusted by lengthening or shortening the chain. If the rail is too high, shorten the chain; if too low, lengthen the chain.

After adjusting the rail to its correct position at the bottom, the cam should be turned until the roller is in the hollow of the cam. This will raise the rail to its highest position. If the length of the traverse is incorrect, adjust it by means of the quadrant lever on the rocker shaft. Next turn the cam so as to bring the roller on the highest position of the rail with the chain.

The length of the chain determines the position of the rail. The quadrant lever regulates the length of the traverse. The builder should be so adjusted that the builder lever will be level at the center of the traverse. If the lever is not level at this point the tapers of the bobbin will be unequal.

To change from warp to filling wind put on the leaf cam, hook the chain in the end of the loose lever and adjust the length of traverse and the position of the rail, just as in the case of warp-wind.

The number of teeth taken on the pick gear is regulated by moving the end of the rod on the ratchet lever or by changing the position of the collars on the rod slightly.

When setting the Howard and Bullough builder for filling wind, place the roller under the filling cam. Next put on the filling quadrant and put the chains over the chain rollers on the builder lever. Now turn the cam to the highest position; this will bring the rail down to its lowest position. The rail should now be adjusted by the adjusting nut on the connecting rod. Next place the cam in its lowest position and adjust the length of traverse by the lever on the rocker shaft. Lowering the nut lengthens the traverse, and raising makes a shorter traverse.

When changing from filling wind to warp wind, change the roller from the filling cam to the warp cam; then remove the chain rollers on the builder lever. Next change the quadrant lever, putting on the warp quadrant, and adjust the length of the traverse and the position of the rail just as in the case of the filling wind.

When it is desired to change the number of teeth taken on the pick gear, move the guard over the ratchet until the pawl takes the necessary number of teeth.

There is no set standard as to the number of traveler to use on different counts of yarns, as this will vary widely under the greatly diversified conditions of spinning.

The size of the ring used should be about ⅛-inch larger than the diameter of the full bobbin. If a larger ring than necessary is used, a great deal of extra tension is put on the yarn when the bobbin is small. This is due to the angle of pull, and the extra distance the traveler is forced to make on each revolution.

Rings are used with either a single or double flange. The double-flange ring is the most practical, as when one side is worn they can be cleaned and polished and reversed. This gives them double the life of a single-flange ring.

The ring is made with flanges of several different widths. Narrow flanges should be used for fine yarns, and wider flanges are used on coarse yarns.

The narrow-flanged ring is used on fine counts, so that the traveler used can be made from heavier stock. This gives greater strength to the traveler, at the same time allowing the traveler to be light enough so that no strain, above that required for proper tension, is placed on the yarn.

The widths of the various flanges are as follows: No. 1 flange, 4/32 inches; No. 2 flange, 5/32 inches; No. 3 flange, 6/32 inches; No. 4 flange, 7/32 inches; No. 5 flange 8/32 inches; No. 6 flange, 9/32 inches.

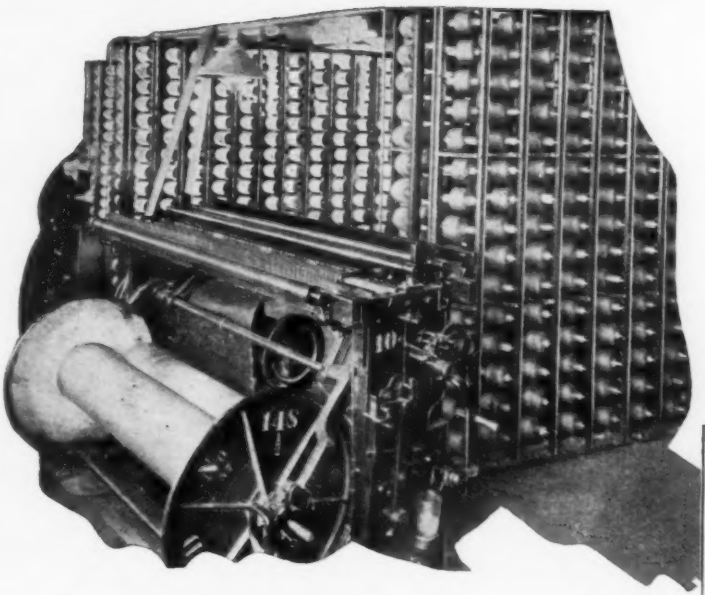
For average spinning requirements, I find that the No. 2 flange gives good results.

To clean the rings, the rails should be removed from the frame and placed in a very hot solution of potash. They should be soaked in this bath about eight or ten minutes. Then dip them in very hot water and solution just as hot as possible. This is so the ring and rails will dry without any rust forming.

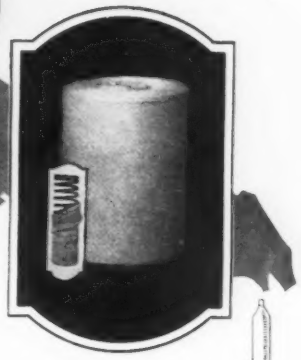
As it is quite impracticable to attempt to run the front rolls higher than 200 r.p.m., the speed of the spindles must be governed largely by this.

Spindle speeds vary a great deal, depending upon the class of work being run, etc. Below are given some average speeds for rollers and spindles on different counts of yarn:

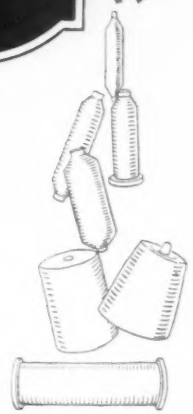
5s warp yarn—200 r.p.m. rollers— 6,800 r.p.m. spindles.
35s warp yarn—120 r.p.m. rollers—10,000 r.p.m. spindles.
60s warp yarn— 95 r.p.m. rollers—10,000 r.p.m. spindles.



• *Use* •
FRANKLIN PROCESS
Colored Yarns
The Wound Form Dyeing
Reduces
Winding Costs



FRANKLIN PACKAGE *and* Franklin Tube



Have Your Yarn Dyed Ready for the Creel!

YOU can deliver yarn to us in any of the forms illustrated on the right. We wind to Franklin Packages and deliver the dyed yarn to you in this same form. We thus reduce the time required in your mill in preparing yarn for dyeing, and also speed up the return of the yarn to you.

The Franklin Package, fitted with a wooden skewer, goes directly into the creel without any preliminary operation. Yarn delivering from this form of container runs with much less breakage than from skeins or chain warps. In fact, on fine count yarns the Franklin Package frequently saves from three to five cents per pound in winding costs.

In addition, the Franklin Process gives better dyeing—complete penetration, more permanent shades, no tangling or felting, less shrinkage,—a better product. If you buy your yarns from us on Franklin tubes we offer another advantage, that of buying *net* weight.

Get the complete story from our book, "The Franklin Process—Its Contribution to the Textile Industry." We will forward a copy on request.

We accept yarn in any form that will deliver over end,—bobbins, tubes, cones or cops.

We also receive and deliver worsted yarn on jackspools.

FRANKLIN PROCESS COMPANY

Dyers of cotton, woolen, worsted, jute, hemp and linen yarns and silk noils, also yarn spinners and manufacturers of glazed yarns.

OFFICES

Main office and plant
Providence, R. I.
Branch plant at Philadelphia

New York Office
66 Leonard Street

Southern Franklin Process Company
at Greenville, S. C.

FRANKLIN PROCESS

Commission Dyeing of Yarn in the Wound Form

In cases where rolls are leather-covered they are weighted by saddles, stirrups, levers and weights. A saddle is used on the back and middle rolls, and another saddle rests on the front rolls and the back saddle. A stirrup is hung from the front saddle and the weight is applied to the stirrup by a lever. A weight of from about 2¾ pounds is hung on the lever. (I recently had an article in this department on how to figure total weight on spinning rolls, so it is unnecessary to give the rule again).

For fine yarns, where the middle roll is self-weighted, a saddle rests on the back and front roll only. The middle roll is entirely free of weight.

The front roll only would be weighted when the middle and back rolls are plain iron rolls.

A square should be used to set the front top roll with the bottom roll. The top roll should be allowed to drop well forward. A level square should be used and the head set off at an angle, to allow the roll to drop forward.

The back of the guide wire should be set directly over the top of the spindle, and should be from two inches to three inches above the top of the bobbin. If the guide wire is too close to the bobbin, excessive breakage is the result.

The weight of the traveler used should be just heavy enough to make a firm bobbin and prevent excessive ballooning. When separators are used they should be kept clean and well polished.

The best built bobbin is made when the fast motion acts as the rail is running down. The bobbin will unwind better than when the fast motion acts when the rail is running up. In making the change at the nose of the bobbin from the slow to the fast motion, the extra pull is put upon the yarn when the tension is greatest. This very often causes considerable breakage of ends.

With the slow motion when the rail is running down a softer nose will be made on the bobbin, but the yarn is likely to pull off in bunches when being unwound. The frame will run better with the slow motion running down.

To set the builder, on a Whitin ring frame, for warp wind, first hook the chain in the hole on the rack, then wind the rack right back to the starting point. The warp cam should then be put on and turned so as to bring the roller to the highest point. This will bring the rail to the bottom. The position of the rail can then be easily adjusted by lengthening or shortening the chain. If the rail is too high, shorten the chain; if too low, lengthen the chain.

After adjusting the rail to its correct position at the bottom, the cam should be turned until the roller is in the hollow of the cam. This will raise the rail to its highest position. If the length of the traverse is incorrect, adjust it by means of the quadrant lever on the rocker shaft. Next turn the cam so as to bring the roller on the highest position of the rail with the chain.

The length of the chain determines the position of the rail. The quadrant lever regulates the length of the traverse. The builder should be so adjusted that the builder lever will be level at the center of the traverse. If the lever is not level at this point the tapers of the bobbin will be unequal.

To change from warp to filling wind put on the leaf cam, hook the chain in the end of the loose lever and adjust the length of traverse and the position of the rail, just as in the case of warp-wind.

The number of teeth taken on the pick gear is regulated by moving the end of the rod on the ratchet lever or by changing the position of the collars on the rod slightly.

When setting the Howard and Bullough builder for filling wind, place the roller under the filling cam. Next put on the filling quadrant and put the chains over the chain rollers on the builder lever. Now turn the cam to the highest position; this will bring the rail down to its lowest position. The rail should now be adjusted by the adjusting nut on the connecting rod. Next place the cam in its lowest position and adjust the length of traverse by the lever on the rocker shaft. Lowering the nut lengthens the traverse, and raising makes a shorter traverse.

When changing from filling wind to warp wind, change the roller from the filling cam to the warp cam; then remove the chain rollers on the builder lever. Next change the quadrant lever, putting on the warp quadrant, and adjust the length of the traverse and the position of the rail just as in the case of the filling wind.

When it is desired to change the number of teeth taken on the pick gear, move the guard over the ratchet until the pawl takes the necessary number of teeth.

There is no set standard as to the number of traveler to use on different counts of yarns, as this will vary widely under the greatly diversified conditions of spinning.

The size of the ring used should be about ⅛-inch larger than the diameter of the full bobbin. If a larger ring than necessary is used, a great deal of extra tension is put on the yarn when the bobbin is small. This is due to the angle of pull, and the extra distance the traveler is forced to make on each revolution.

Rings are used with either a single or double flange. The double-flange ring is the most practical, as when one side is worn they can be cleaned and polished and reversed. This gives them double the life of a single-flange ring.

The ring is made with flanges of several different widths. Narrow flanges should be used for fine yarns, and wider flanges are used on coarse yarns.

The narrow-flanged ring is used on fine counts, so that the traveler used can be made from heavier stock. This gives greater strength to the traveler, at the same time allowing the traveler to be light enough so that no strain, above that required for proper tension, is placed on the yarn.

The widths of the various flanges are as follows: No. 1 flange, 4/32 inches; No. 2 flange, 5/32 inches; No. 3 flange, 6/32 inches; No. 4 flange, 7/32 inches; No. 5 flange 8/32 inches; No. 6 flange, 9/32 inches.

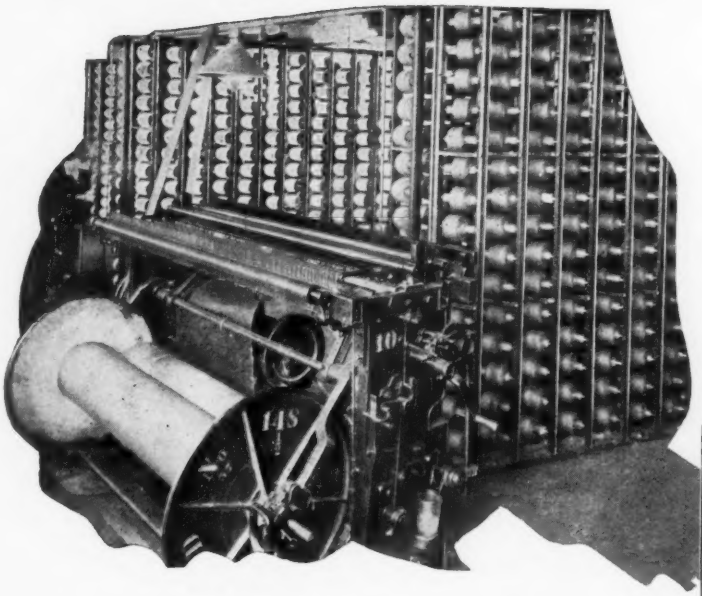
For average spinning requirements, I find that the No. 2 flange gives good results.

To clean the rings, the rails should be removed from the frame and placed in a very hot solution of potash. They should be soaked in this bath about eight or ten minutes. Then dip them in very hot water and solution just as hot as possible. This is so the ring and rails will dry without any rust forming.

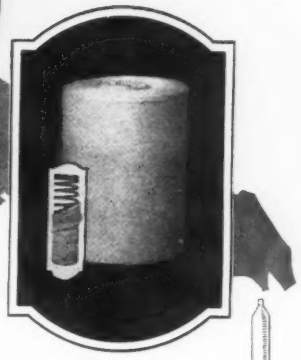
As it is quite impracticable to attempt to run the front rolls higher than 200 r.p.m., the speed of the spindles must be governed largely by this.

Spindle speeds vary a great deal, depending upon the class of work being run, etc. Below are given some average speeds for rollers and spindles on different counts of yarn:

5s warp yarn—200 r.p.m. rollers— 6,800 r.p.m. spindles.
35s warp yarn—120 r.p.m. rollers—10,000 r.p.m. spindles.
60s warp yarn— 95 r.p.m. rollers—10,000 r.p.m. spindles.



• *Use* •
FRANKLIN PROCESS
Colored Yarns
The Wound Form Dyeing
Reduces
Winding Costs



Have Your Yarn Dyed Ready for the Creel!

YOU can deliver yarn to us in any of the forms illustrated on the right. We wind to Franklin Packages and deliver the dyed yarn to you in this same form. We thus reduce the time required in your mill in preparing yarn for dyeing, and also speed up the return of the yarn to you.

The Franklin Package, fitted with a wooden skewer, goes directly into the creel without any preliminary operation. Yarn delivering from this form of container runs with much less breakage than from skeins or chain warps. In fact, on fine count yarns the Franklin Package frequently saves from three to five cents per pound in winding costs.

In addition, the Franklin Process gives better dyeing—complete penetration, more permanent shades, no tangling or felting, less shrinkage,—a better product. If you buy your yarns from us on Franklin tubes we offer another advantage, that of buying *net* weight.

Get the complete story from our book, "The Franklin Process—Its Contribution to the Textile Industry." We will forward a copy on request.

The FRANKLIN PACKAGE *and* Franklin Tube

We accept yarn in any form that will deliver over end,—bobbins, tubes, cones or cops.

We also receive and deliver worsted yarn on jackspools.

FRANKLIN PROCESS COMPANY

Dyers of cotton, woolen, worsted, jute, hemp and linen yarns and silk noils, also yarn spinners and manufacturers of glazed yarns.

OFFICES

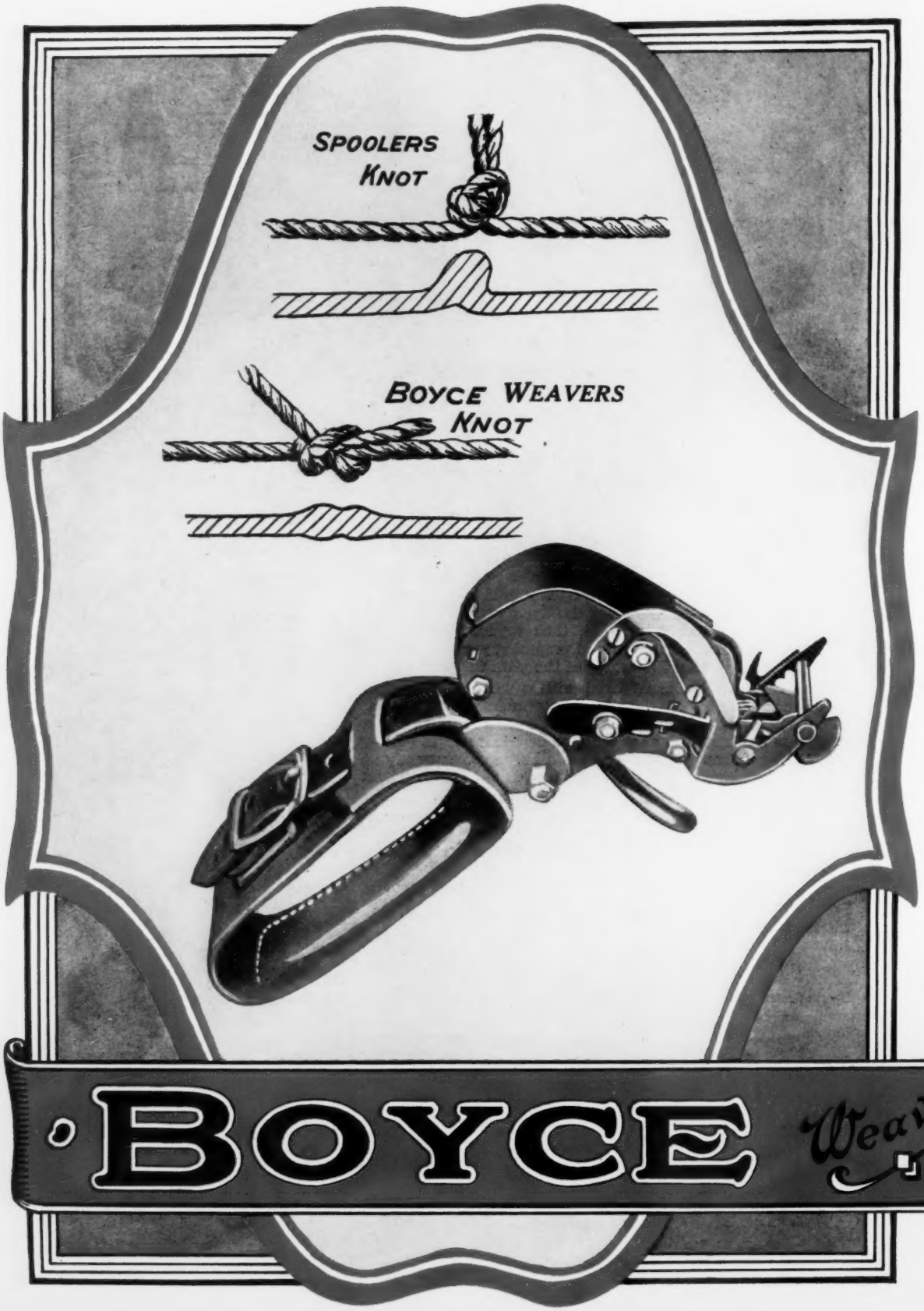
Main office and plant
Providence, R. I.
Branch plant at Philadelphia

New York Office
66 Leonard Street

Southern Franklin Process Company
at Greenville, S. C.

FRANKLIN PROCESS

Commission Dyeing of Yarn in the Wound Form


SPOOLERS KNOT
BOYCE WEAVERS KNOT
BOYCE
Weavers

Decrease seconds —Improve character and quality of your cloth

THERE is no question about the value of the weaver's knot for textile processes and products. It weaves and knits without difficulty, thus preventing breakage and lost production. Its small size and balance allow it to become imbedded in the fabric, preventing unsightly defects.

Boyce Weavers Knotter automatically ties a perfect weaver's knot 30% to 40% faster than hand tying. It weighs only five ounces, is constructed of high grade steel, and is easy to operate.

Many mills in the United States, Canada, and England are now using Boyce Weavers Knotter on coarse and fine yarns in the operation of spooling, winding, doubling, reeling, twisting, etc., effecting pronounced savings in labor and production, and materially improving the character and quality of their products.

Let us send you full information on Boyce Knotters and put our service department at your disposal.

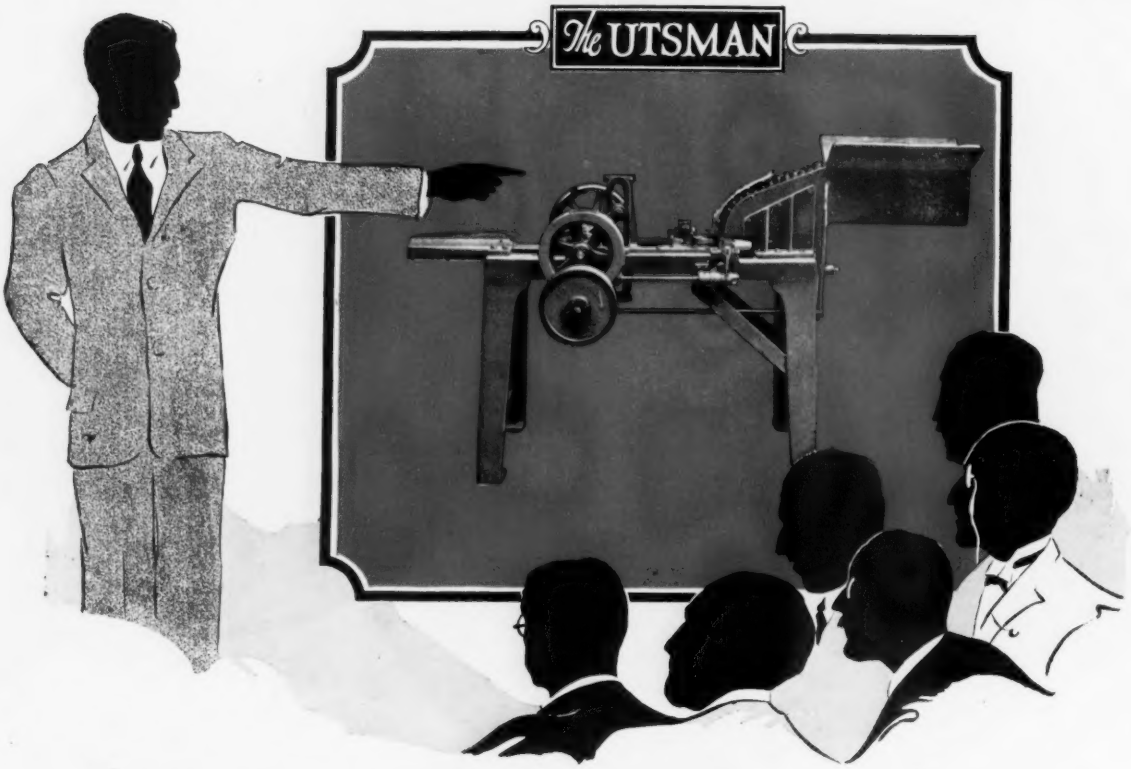
MILL DEVICES CO., Inc.
GASTONIA, N. C.

Northern Representative:
C. E. Herrick,
401 Union Trust Bldg.,
Providence, R. I.

Canadian Agents:
W. J. Westaway Co., Ltd.,
Hamilton, Canada.

European Agents: Mellor, Bromley & Co., Ltd., Leicester, Eng.

KNOTTER



Is Your's an UTSMAN *Mill?*

There are literally hundreds of mills in the United States, Canada and abroad which have been able to make substantial annual savings by cleaning feeler bobbins with Utsman Cleaners.

If your mill is not one of these, possibly it is because our Engineering Department has found yours is one of those exceptional cases where an Utsman will not effect a worth while saving.

However, it may be that an Utsman will cut your cleaning cost, your cost of feeler bobbins and your non-productive labor cost (caused by delays of departments resulting from broken bobbins or from waiting for cleaned quills) to such an extent it will pay for itself over and over again in a comparatively short length of time.

The single end Utsman cleans approximately 4,000 and the double end Utsman approximately 8,000 bobbins every hour, without cutting or splintering of the bobbins. ***It gets all the waste and leaves the bobbin whole.***

Without the slightest obligation upon your part, write us for complete information regarding the Utsman Feeler Bobbin Cleaner, and what it will do for your mill. Address, Engineering Department, **The Terrell Machine Company, Charlotte, N. C.**

UTSMAN

FEELER BOBBIN Terrell CLEANER

100s warp yarn— 70 r.p.m. rollers— 9,400 r.p.m. spindles.

I trust the folowing notes on general spinning room practice will be found useful to a few of the readers.

Spinning frames must be set level and plumb; the spindles should be kept lined and plumb and central to the ring.

If spindles are out of plumb or do not run in the center of the ring at top and bottom of the traverse, strips of paper should be inserted between the base and the rail.

The guide wires should be set so as to deliver the end directly over the center of the spindles.

The bottom rolls should be cleaned and scoured thoroughly every four to six months.

All bad top rolls should be replaced once a week by the section hand. When top rolls are set, care should be exercised to see that the roll drops well forward over the bottom roll.

During the sticky warm weather, if the bottom rolls are closed slightly and the top rolls spread, it will aid greatly in overcoming roller laps on the middle rolls.

When banding a frame, all bands should be put on with as nearly even tension as possible. If bands are slack soft bobbins will be made. Tight bands consume power and place undue strain on the cylinder bearings, spindles, etc. All bands used should be of the same diameter. Otherwise a difference in spindle speeds exists, consequently uneven twisting.

The spindles should be oiled every two or three weeks, depending upon the speed.

Gearing head and cylinder bearings should be oiled twice a day. Oil front roll twice a day. The back rolls, both top and bottom, must be oiled twice a week.

Leather rolls can be cleaned with a piece of waste and a mixture of alcohol and water, mixed in equal parts.

All bobbins should be carefully inspected periodically. All tight ones should be reamed and split ones discarded. Any bobbins that have become roughened should be sandpapered and revarnished.

The length of traverse and the diameter of the ring should be as large as practical, as production will be increased on spinning, spooling and winding. Also thousands of knots will be eliminated and the quality of the yarn will be greatly increased.

There is a great deal of difference of opinion as to which method of arranging spinning rolls is best. If all rolls are weighted the front line should be shell rolls.

Short boss rolls are generally conceded to produce best results. The advantage of the long boss roll is in cleaning. There are also only half the weights, stirrups and saddles. If a long roll can be covered evenly the covering will give much greater service than will a short boss roll.

Good results are obtained by using a shell roll arbor that is tapered slightly away from the center of each boss. This allows the shell to seat firmly on the bottom roll. Long boss shell rolls using the tapered arbor can be covered much more closely than the ordinary roll, and excellent results are derived from it. The quality of the work produced is good, and the roll has a long life.

A number one flange on rings up to two inches gives excellent results. The travelers last much longer and they do not have the same tendency to fly off.

When testing a yarn with the hand tester, run the tester at a uniform speed; also do not have the skein twisted.

Below are given rules for finding the breaking weight of carded warp yarns:

Rule 1. To find the breaking weights of carded warp yarns, add the counts of the yarn to 1900 and divide the total by the counts.

As an example we will take 20s carded warp yarn:

$1900 + 20 = 1920$. $\frac{1920}{20} = 96$ pounds breaking strength.

Rule 2. Divide the counts of the yarn into 1800, and to the quotient thus obtained add 3 pounds.

Example: 20s carded warp yarn:

$1800 \div 20 = 90 + 3 = 93$ pounds breaking strength.

As you will notice, these rules vary to some extent. However, in the higher numbers, they will be found to more nearly coincide with each other, until we get to about No. 70s yarn, when they vary slightly again. I have no way of saying which could be considered most nearly correct, but I believe Rule No. 1 is in most general use.

Rule 3. Multiply the count of the yarn by 5. Add the constant 1600. Divide the sum by the counts of the yarn.

Example: 20s carded warp yarn:

$\frac{1600 + 100}{20} = 85$ pounds breaking strength.

So far as I am able to say, all three of these rules are based on the twist multiplier, 4.75. There is a very wide variation shown, which proves that all rules seem to be but a poor approximation. Rule No. 3 is far too low to be satisfactory.

To find the breaking strength of filling yarns, multiply the counts by 13, subtract the product from 1900 and divide the remainder by the counts.

Example: 40s filling yarn:

$13 \times 40 = 520$. $1900 - 520 = \frac{1380}{40} = 34.5$ pounds breaking strength.

To find the standard breaking strength for combed yarns, multiply the counts by 4, subtract this product from 2600 ,and divide the remainder by the counts.

Example: 60s combed warp yarn:

$60 \times 4 = 240$. $2600 - 240 = 2360$. $\frac{2360}{60} = 39.3$ pounds breaking strength.

Rule No. 2. Example: 60s combed warp yarn:

Divide the counts of the yarn into 2500 and from the quotient thus obtained subtract 3 pounds.

$\frac{2500}{60} = 41.6 - 3 = 38.6$ pounds breaking strength.

When it is desired to find the comparative strength when the counts of the yarn differ it is first necessary to find a standard number for one of the yarns. Next we find what the yarn should break at if changed to another number or count.

To find a standard number for carded yarn, multiply the counts of the yarn by the breaking strength in pounds and subtract the counts from the product; the remainder will be the standard number for that yarn.

To find the breaking strength for any other number, add the counts to the standard number and divide the result by the counts.

Example: What should be the breaking strength of 62s

BASIC SLAG
For better Concrete

Fireproof Concrete generally means

ENSLEY & ALA CITY
BASIC SLAG
CRUSHED & SCREENED

The new million dollar home of the Continental Gin Co. at Birmingham is another noteworthy example of maximum strength and fire safety obtained through the use of our pure Basic Slag in concrete construction.

Maximum strength! resulting from the coarse, angular nature of Basic Slag and its remarkable bonding qualities. Maximum fire safety! because Slag itself is fireproof. Get all the facts about Slag Concrete before you build!

BIRMINGHAM SLAG CO.
ATLANTA
THOMASVILLE · BIRMINGHAM · MONTGOMERY
OCALA, FLA.
SLAG HEADQUARTERS FOR THE SOUTH

The Invisible Exit for Production Cost Leakage

Your profits do not always make their exit from your mill via the accountant's ledger. If you are paying your weavers by the old fashioned yardage method which requires faulty human tally, then another exit exists in your plant, through which many unaccounted for profits or lack of profits make their getaway. And that outlet is the pay envelope.

Install facts—place a Root Pick Counter on every loom. They keep your actual and estimated production costs the same at all times.

Let us tell you all about them.

THE ROOT CO.
BRISTOL CONN
4 Beck Street

Pick Counters

Southern Representative:
W. A. Kennedy
1106 Johnston Bldg.
Charlotte, N. C.

carded yarn if 60s broke at 35 pounds?

$35 \times 60 = 2100$. $2100 - 60 = 2040$ standard.

$\frac{2040}{62} + 62 = 33.9$ pounds breaking strength of 62s.

To find a standard for combed yarn, multiply the counts by the breaking strength in pounds and add four times the counts to the product. The result will be a standard for that yarn.

To find the breaking strength for any other count subtract four times the counts from the standard number and divide the remainder by the counts.

Example: What should be the breaking strength of 62s combed yarn if 60s broke at 40 pounds?

$60 \times 40 = 2400$. $2400 + (60 \times 4) = 2640$ standard.

$2640 - (62 \times 4) = 2392$. $\frac{2392}{62} = 38.58$ pounds breaking strength of 62s.

To return to the subject of top rolls again, for a moment, I would like to add that short boss rolls are preferred for these reasons:

1. As the boss of the roll is shorter, there is less liability of imperfections in the roller covering.

2. Also, there being only one end to each boss, the chances of making doubles is very slight. It is almost impossible to make double spun yarns on single boss rolls.

3. When an end breaks and the end laps around the top or bottom roll, raising the top roll, the other end of a double boss roll would produce bad yarn. This could not happen when using single boss rolls.

On numbers coarser than 20s, the double boss roller is advisable, due to less cleaning and oiling, etc. A coarser yarn does not require as perfect a cot as do fine yarns.

The rolls should be of the proper diameter to suit the staple to be run. On coarse numbers, where short stock would be used, the rolls should be of small diameter, to allow close settings. Good work throughout the entire mill is often spoiled at spinning through the wrong size rolls.

Round point travelers seem to give better results under most conditions than do square point travelers, and seem to be most generally used.

Below is given a few reasons for using different travelers:

1. A large ring requires a lighter traveler than a small one.

2. A higher spindle speed requires a heavier traveler.

3. A change to coarser yarn requires a heavier traveler.

4. Putting in more twist will sometimes require a heavier traveler.

5. Using a better grade cotton may require a heavier traveler.

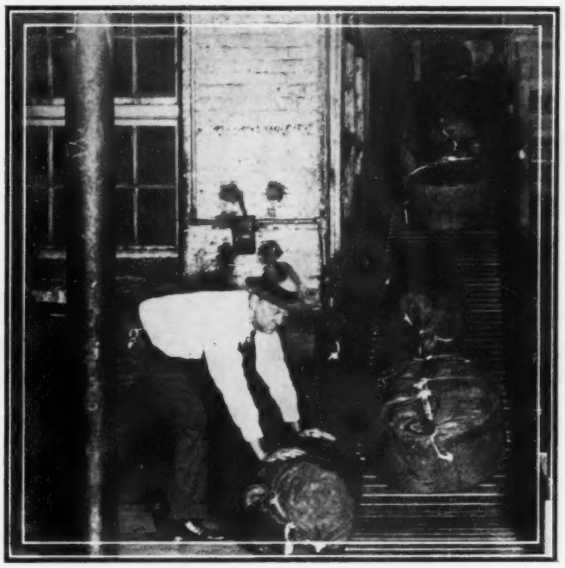
6. A heavier traveler is used on an old frame than would be used on a new frame.

7. During dog days, when the weather is moist and sticky, travelers run hard and fly off. Heavier travelers could be run in a case like this, providing the yarn will stand the extra tension.

8. Short stock, weak staples, or yarns that are drafted heavily require lighter travelers than would the same numbers spun under better conditions.

Spindle slippage caused by loose bands, improper spindle oil, etc., is usually taken at 5 per cent.

The average number of spindles that a spinner can care for varies greatly with conditions. As a rule, a spin-



Handling Textile Materials *with* a Profit

IN planning your new mill construction, or enlargements or betterments, for 1926, take into account the practical utility of mechanical handling of materials, raw or in process.

Where your flow-sheets show a continuous movement of material in one direction over a definite path the installation of a Mathews Conveyer System—using either gravity or power—will be a long step in the direction of a wider profit margin by reason of the inevitable reduction in costs that will follow.

Other textile manufacturers have discovered these savings in the handling of raw materials; finished goods in rolls, bales, or cases; bobbins, quills, spools and the like.

Check up the material transportation in your plant with a Mathews Engineer who will make recommendations for profitable conveyer service with no obligation on your part.

MATHEWS CONVEYER COMPANY
162 Tenth Street Ellwood City, Pa.
Canadian Factory: Port Hope, Ont.

MATHEWS
Conveyer Systems

ALL STEEL
ECONOMY
FIRE PROOF
BALING PRESSES
ALL SIZES FOR ALL PURPOSES
LARGEST LINE BUILT IN U.S.A.
ECONOMY BALER CO., DEPT. C, ANN ARBOR, MICH., U.S.A.

There is a Pee Gee Paint Product for Every Purpose

Pee Gee PAINTS
SINCE 1867
VARNISHES STAINS ENAMELS

J. L. GLENN
Special Representative
CHARLOTTE, N. C.

PEE GEE MILLITE
Stays White

It will not discolor and that accounts for its constant use over a period of many years by hundreds of mills. It will not fade, peel or check—it stays white and it spreads light. Complete information and prices on Millite or any Pee Gee paint product may be had by addressing J. L. Glenn special representative at Charlotte N. C. or any Pee Gee office.

PEASLEE-GAULBERT, CO. INC. LOUISVILLE—ATLANTA—HOUSTON—DALLAS

DIXON'S
SILICA-GRAPHITE
PAINT

because of its better protective qualities, makes frequent repairing unnecessary and so gives better protection at less cost.

It is a natural combination of flake silica-graphite, mined only by ourselves. The vehicle is the best linseed oil obtainable.

Dixon's Silica-Graphite Paint will not peel, crack or flake off because of the natural elasticity of the flake graphite, while the silica is an anchor that withstands wear.

It is made from FIRST QUALITY only with a reputation for economy covering a period of 50 years.

Write for Booklet No. 34-B
and long service records.

JOSEPH DIXON CRUCIBLE CO.
Jersey City, N. J.
Established 1827

GARLAND

Have You Noticed the SOLID LOOPS in "GARLAND" Loom Harnesses?

The loops of our loom harnesses are filled with varnish, every one, and are as solid as the best varnish can make them. This prevents the eyes from working loose and breaking the warp threads which mean better weaving and more of it.

GARLAND MFG. CO.
SACO, MAINE

ner on coarse work can handle about 1,000 spindles; on medium counts about 1,200, and on finer counts 1,400 to 1,500 spindles.

Spindles can be kept in much better shape if the dirty oil is removed periodically and the spindles set about once or twice a year, depending upon general conditions.

When spinning 50s or finer the frames should be thoroughly scoured once a year; on 30s to 50s about twice a year, and on numbers coarser than 30s three and in some cases four times a year is not too often.

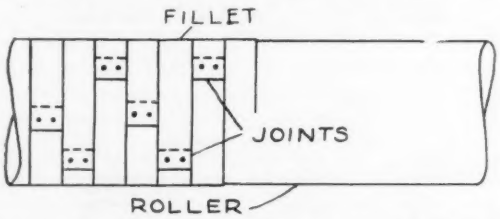
When washing the ring rails a strong solution of ammonia can be used in place of the potash solution if desirable. Both solutions should be very hot. After immersion in the solution and clear hot water, the rails can be dried quickly in fine sawdust. The rails will come out as bright as when new. C. C. (N. J.).

Applying Fillet to Stripping Rollers.

Editor Cotton:

In the February issue of your magazine, I note with interest the arguments relative to vacuum and roller stripping of cards. Several of the writers of these articles mention the fact that a roller will loosen the card clothing if set too deep.

In my opinion, this effect of the roller is largely caused by the way the stripper fillet is put on the roller. When



the fillet is wound spirally on the roller from end to end, it is natural that when stripping the card the card clothing will be pushed one way because of this spiral wind.

The logical way to clothe a stripping roller is to pull the fillet around the roller one time, tack it down and cut it off. The joints should be staggered as shown in the diagram.

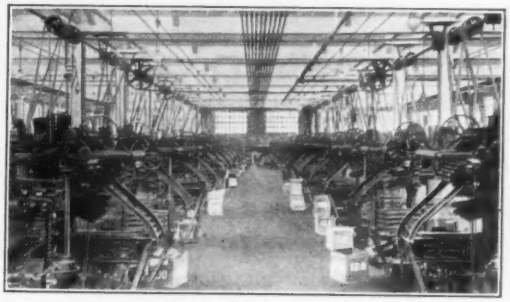
In addition to the foregoing named advantage, it is also easy and economical to replace the mashed ends of the fillet with one or two pieces of new fillet only as long as the circumference of the roller. B. B. (N. C.)

Covering Cones to Reduce Uneven Tension.

Editor Cotton:

I was very much interested in the letter from "G. D. S. (S. C.)" printed in the November issue of Cotton, in reference to irregular roving frame tension, and in answer will say that the point made in my letter, printed in the September number, was to get the tensions as correct as we could, when we changed the diameter of the bottom cones, before we put the covering on. Then we put all we could around the cones, enlarging the diameters without changing any of the tension gears. In this way we could see more about what we were saving in the tensions. We enlarged the diameters of the cones at the large ends about ¾ inch, and at the beginning of the sets on the frames or at the small end of the cones, about ⅛ inch. Of

RHOADS
TANNATE LEATHER BELTING



Longer Lasting—Greater Output

A Georgia mill man recently told our Atlanta manager that his company installed Tannate Belts on their spinning frames in 1912 and 1913. Last October these belts were still running and in good shape. None of them had worn out.

Long life is characteristic of Tannate Belting; but frequently its strong grip is of greater importance because it assures a steady, dependable speed of your machines that usually gives increased output

This has been quite noticeable in some mills, on their front rolls.

It is output that counts!

Write for our special trial offer and guarantee.

NEW RHOADS BELT USERS BOOK SEVENTH EDITION NOW READY. FREE

USE RHOADS TANNATE LACE LEATHER
It outlasts rawhide three to five times.

J. E. RHOADS & SONS

Philadelphia----29 N. Sixth St.
New York----96 Beekman St.
Chicago----316 W. Randolph St.
Atlanta----67 S. Forsyth St.
Cleveland----1206 W. Ninth St.

Factory and Tannery, Wilmington, Delaware

TANNATE
TRADE MARK
REG. IN U.S. PAT. OFF.

COTTON MANUFACTURERS

selling direct or through agents can use the services of this Bank to enable them to distribute their merchandise for cash—and thereby eliminate the credit risk.

TEXTILE BANKING COMPANY
FACTORS
Fifty Union Square
New York

STEEL FRAME
CANVAS BASKETS
Doffing and Trucks
FOR COTTON MILLS
BETTER
TRADE **100%** MARK
BASKET
SMITH MFG. CO., DALTON, GA.

Our Cost Method Is the Result of Twelve Years Experience In More Than One Hundred Mills

Our method is just a business man's reasonable solution of the cost problem such as he might work out himself if he could take several months away from the business to study the best systems in use among competitors and could then devote some more time adapting these methods to his plant.

Although we have installed cost systems in some of the largest mills in the country, we have yet to introduce a system requiring for its maintenance the time of more than one clerk.

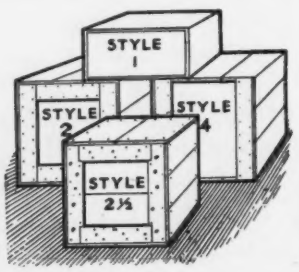
If you would like to talk to some mill chief executives who have our systems in use, just drop us a card or telephone us.

Write for our booklet, "Losses in Textile Plants."

RALPH E. LOPER & CO.
Specialists in Textile Cost Service
INDUSTRIAL ENGINEERS
FALL RIVER, MASS. GREENVILLE, S. C.

Box Shooks

—made of best grade North Carolina pine, planed smooth. Cut from thoroughly dried lumber to prevent excessive weight. Before you buy compare ours with others as to quality and price.



C. M. WALL & SON, Lexington, N. C.
—Plants at—
LEXINGTON, N. C.
DURHAM, N. C. STATESVILLE, N. C.

Bradley Stencil Machine

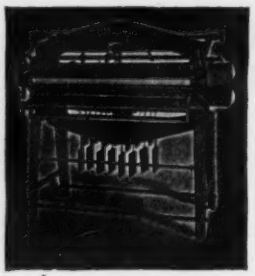
The Bradley Stencil Machine makes Stencils in half a minute at reduced cost of 1-10c each. Write for catalogue and price list.

In universal use by thousands of manufacturers and shippers.

Oil Paper, Stencil Paper and Inks. Bradley Ball Stencil Pot uses Liquid Ink for marking and stenciling. Price 60c or $6.00 per doz. Manufacturers of Oil Stencil Papers.

Write for Prices and Samples

A. J. BRADLEY MFG. CO.
99 Beekman Street NEW YORK



50% Better than ever from YOUR Standpoint

SEVERAL NEW FEATURES

have been added to the "1912" cloth Cutting, Folding and Winding Machine which add at least 50 per cent to its value to YOU.

It will cut your cloth, fold the edges—roll it up and give you an exact measurement of every piece of cloth going through the machine.

It saves time, labor, machines and cloth.

YOU ONLY NEED ONE MACHINE where before it required two and you get an extra strip from each bolt of cloth.

It cuts the corners of expenses in every way and leads to more and greater profits.

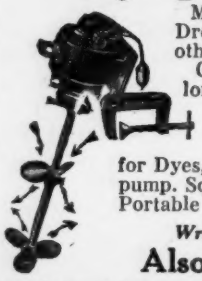
THE ENORMOUS SAVING WILL INTEREST YOU.

Mail a card for complete information and prices.

When in need of special machinery, write us.

J. A. FIRSCHING, 614 Broad St., Utica, N. Y., U. S. A., Dept. "C."

"Hy-speed" Mixers



Mix Dyes, Pigments, Extracts, Dressing, Oils, Chemicals or any other liquids.

Clamp to any tank up to 3,000 gallons. Operates from light socket.

"Hy-speed Filter Tanks"

for Dyes, Oils, Chemicals. Complete with pump. Square glass coated Storage Tanks. Portable Electric Pumps, etc.

Write for complete catalogues.

Alsop Engineering Co.
47 W. 63rd St. New York

course we did not do this the first time we tried it out, for we had to take off some and do it over and over again, to get just what would run all the way through the building up of a bobbin, from the start to the full bobbin, and do some "equalizing" at different places on the cones. The frames that were giving us the most trouble were some old Saco water-power slubbers, and after doing this, along with some other re-modeling or repairing, the frames run like new ones. I wish it were so that "G. D. S. (S. C.)" could come over and see for himself just how "sweetly" these old frames do run. I have eight, and two men handle them without the assistance of any spare hands.

Along with these changes, we cut the speeds down to 242 r.p.m. on the jack shafts; 680 r.p.m. on the spindles and 172 r.p.m. on the front roll, on 0.76 hank roving. These changes did their part in making the frames run better. We did this cone covering on the 9 x 4½ intermediates and 7 x 3 fine roving frames, but the results were not as noticeable on the finer frames as on the slubbers. All this reduced the stretch in the rovings and made stronger yarn and more even yarn in the spinning, and this caused the spinning to run better.

Another important thing is to watch the temperature of the room. I know that many other men have gone into the spinning room and found things running badly, when there was nothing to do but to regulate the climatic draft from the outside by either shutting or opening some of the transom windows and sometimes giving the floors only a slight sweeping or doing other little cleaning that is necessary. T. A. D. (Ga.)

Flyer Lead and Bobbin Lead.

Editor Cotton:

In the October number of Cotton "C. I. K. (Mass.)" makes an attempt to answer my question which was printed in the June issue of Cotton.

In this letter he says, "'Wash' believes that some bobbins will wind on more roving than others on a bobbin lead frame." Continuing, he states, "I claim that a bobbin lead or a flyer lead has nothing whatsoever to do with the amount of roving wound on a bobbin."

I want to take this opportunity to thank "C. I. K." for trying to answer my question and shall appreciate it very much if he will answer the following: 1st, if a bobbin lead or a flyer lead frame has nothing whatsoever to do with the amount of roving wound on the bobbin, why was the change made in the system of winding? 2nd, why will a flyer lead frame run a lower grade of stock, even waste, than will the bobbin lead? 3rd, why does the bobbin lead make a firmer or harder bobbin than the flyer lead? 4th, which has the more pressure at the termination of the presser pad? 5th, which is the best method of winding, the roving being drawn past the pressure of the presser pad (as in the case of the bobbin lead), or the presser pad drawn over the roving (as in the case of the flyer lead)?

In the same issue I find that "T. A. A. (S. C.)" unconsciously gives the bobbin lead system a bad black eye when he states: "There are many points which will cause the roving the run out, a few of them being: 1st, irregular diameter of bobbins."

Now if unequal conditions found on all bobbin lead fly frames are not to blame for the irregular diameter of bobbins, what is? What "T. A. A." states in the third

"Buffalo" equipment handles the air at a profit

Perhaps you already operate a Buffalo Ventilation System in your dye house or bleachery, but if you do not, do you know how much money some users of this system are SAVING?

We have records of actual savings affected in less spoiled goods, longer life of roofs and increased production totaling in some cases as high as $10,000 a year.

While part of the success of Buffalo installations is due to the arrangement of the system, much of it is due to the advanced design of Buffalo fans and heaters.

Buffalo fans have certain desirable characteristics which enable them to deliver their rated capacity steadily for years. Sturdy construction, large bearings and efficiently balanced wheels combine to make Buffalo fans the logical choice for ventilation work.

Buffalo heaters are made in a variety of types to fit all requirements.

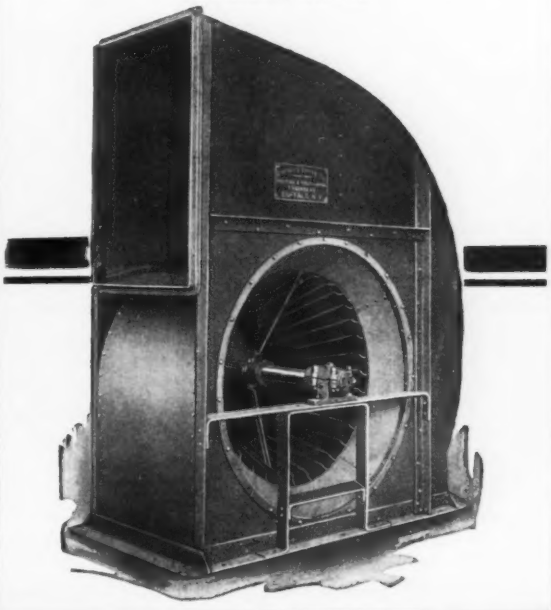
Why not write to us today—giving rough dimensions of the buildings you'd like to ventilate with a list of the equipment in them. In return, we'll give you the approximate price of a Buffalo Ventilation System that will remove steam vapors, keep the air fresh and clean, increase the life of your machinery and roofs—and enable you to get more work out of your men.

Write to us now—our service is free

Buffalo Forge Company

460 BROADWAY, BUFFALO, N. Y.

In Canada—Canadian Blower & Forge Company, Ltd., Kitchener, Ontario



paragraph of his letter is not new to the readers of this department. This question is a serious one, and I should like to have some of the readers equip a fly frame with the best top drawing rolls and creel the roving made from same all in one row. The pull from the front row is the same on all bobbins, the same as on all other rows. So please make this test in one of the four rows and be convinced that the bobbin lead system has caused, and is causing, much uneven roving and yarn in our cotton mills.

Wash (R. I.)

Fluted Rolls and Breaking Strength.

Editor Cotton:

In regard to the article by "T. A. D. (Ga.)" in the "How Other Men Manage" department of the November number of Cotton entitled "Fluted Rolls and Breaking Strength," will say that I am much in the same boat. I have tried everything and still have trouble. I have three makes of spinning mules, and get most of my fluted rolls on one make of mules. For a while I will be bothered with fluted rolls, and then will go along for some time without any trouble. We buy the best grade skins that we can get.

Concerning the question "How many readers have found any difference in breaking strength from rollers that are fluted and those not fluted?" will say I have made several tests. On 45s yarn I took sixteen cops, this yarn being made with fluted rolls. The average size was 44.74s and the average break 35 pounds. On taking the yarn off the same spindles, but putting in new rollers, the yarn sized 44.61s and broke at 36.

I trust this will be of interest to "T. A. D.," and hope to see in the columns of Cotton the findings of others.

Rig (Mass.).

Slack Selvages on Warper Beams.

Editor Cotton:

I notice in the "How Other Men Manage" department of Cotton for February the discussion of "J. R. (Mass.)" in regard to slack yarn at the selvages on warper beams. "J. R." is right when he says there can be slack selvages when the spaces of the front comb are perfect. If the drum and beam barrel are not parallel there will be high selvages, which is the cause of slack threads at the slasher. This is caused by one of the arms holding the beam journal being worn more than the others are, the drum not being in line with the shaft that holds the arms. If the beam is not parallel with the drum there will not be any pressure on the yarn at the head of the beam until it runs a little while. It gets slightly larger at head of beam in diameter, and will stay slightly larger in diameter at the head of beam until full.

When I took charge of the mill of which I am now superintendent they were having trouble with slack threads at selvages, and I was informed by the overseer that he could not find the trouble. I found that on two of the beamers one of the arms had been taken off and replaced with a shorter one; the right length was put on and the trouble stopped. If this helps "J. R." or anyone else I hope they will let it be known through the "How Other Men Manage" department.

L. A. B. (N. C.)

A Fly Frame Questionnaire.

Editor Cotton:

On page 163 of the December issue of Cotton I find the following:

"Years ago, in the days of our grandfathers and grandmothers, there was no way to spin yarn except by the old hand-spinning wheel—and the yarn was considered first-class. But today we have some great improvements over the old spinning wheel. We have spinning frames driven by motor, and up-to-date in every way. And the result is that the old-fashioned hand-spinning wheel is set in the corner and looked at only as an antique.

"And that is where 'Wash's' flyer-lead speeder is, so far as the machine builders are concerned. It would be an insult to have a flyer-lead frame on the same floor with the bobbin-lead frame of today. How would the old hand-spinning wheel look standing beside one of the latest up-to-date spinning frames? Picture that in your mind and you will see just how the flyer-lead would look standing beside one of our latest, up-to-date roving frames."

This beats me! In the first place, there is no difference between the flyer-lead and bobbin-lead frames standing together. The difference is only in the winding on. So how can it be an insult and which would be insulted? Only men like "Experience," who wrote the foregoing, in my opinion, and I am going to prove it.

We heard the same thing about the Crighton opener back in 1908. But they are here to stay. In order to determine whether "Experience" is qualified to judge "Wash" or the two systems and their merit. I am going to put him through the following "examination." If he is unable to answer these questions, let him admit it and I will answer them.

(1) Why does a change in the compound pinion affect the size of the bobbin more in the bobbin-lead than in the flyer-lead? (2) Why is it that in the bobbin-lead, when the roving runs out, a layer or more or a variation is found? (3) Why is it that in the bobbin-lead the bobbin revolves at a greater speed than that of the flyer-lead during winding? (4) How is it possible to strain the ends on the flyer-lead when raising the bottom cone will increase the speed of the bobbin to that of the spindle? (5) In the bobbin-lead, let us assume that the train of gears driving the spindle shafts are worn, or the pins in the flyers are worn badly—would this strain the roving? (6) There is enough pressure at the point of the presser pads to revolve the spindles (this has been proven). As the bobbin leads, the delivered roving must be drawn past this point of pressure, which it is that brands the bobbin-lead as the more imperfect machine.

I hope "Experience" will picture that in his mind. To continue with the questions: (7) Why is the formation of the two cones different in the two systems? (8) What has Question (7) to do as regards unequal conditions? (9) In the flyer-lead system, the flyer rotates around the bobbin, thus having a tendency to take the bobbin around with it. Is this an aid to the cone belt? (10) Why can a lower grade of cone belting be used with the flyer-lead? (11) Why can a lower grade of stock be run on the flyer-lead?

Wash (R. I.)

Knitting Section

Fancy Half Hose

B-Vertical Floating Striping Machine
B-Vertical Floating Striper and Dot Machine
***B-6 Machine**
***B-7 Machine**

THESE machines offer a variety of styles and colors to meet all demands.

Simple patterns may be produced on these machines as well as the more comprehensive styles containing a multiplicity of colors, checks, dots, etc., incorporating in one machine the advantages of all these desirable features.

***Models B-6 and B-7**

These machines are built with six and seven yarn feeding fingers, respectively. These machines are of floating vertical striped design.

The vertical stripes are produced by groups of knitting needles knitting with one or two yarns used for plaiting, thus producing a perfectly clear and positive vertical stripe of a greater width than can be produced with reverse plaiting needles, particularly when using worsteds or soft yarns on coarser gauges.

The vertical stripes can be located throughout the circumference of the stocking as desired, by the use of jacks under the needles to produce the vertical stripe of the width desired.

These machines will produce repeated horizontal stripe patterns of any design up to 48 courses, if two or more course width stripes are desired. Repeated patterns up to 24 courses can be made if single course stripes are incorporated in the pattern.

The vertical striping attachment on these machines is so arranged that when making plaids or checked patterns small squares can be inserted in the middle of the check or vertical stripe.

The above machines can be set up for either men's half hose or ladies' hose, if desired.

Established 1865

SCOTT & WILLIAMS

Incorporated

366 Broadway **New York**

NEW ENGLAND SPUN COTTON YARNS

We Spin Cotton Yarns in All Numbers from 1's to 100's.

We Twist these yarns in Any Number of Plys desired from 2 ply up.

We Furnish these single or twisted yarns to suit your own particular purpose. Any Twist you say.

We furnish them on Cones, Tubes, Spools, Bobbins, Warps, Beams, Skeins—Gassed or Ungassed.

We can furnish the above from any Staple Cotton you desire.

COMBED and CARDED AMERICAN or EGYPTIAN

and behind all this an Organization that has been Spinning Yarns for Years and Years.

We recommend

QUISSETT QUALITY YARNS

SPUN FROM

EARLY BLOOM COTTON

QUISSETT MILL

NEW BEDFORD, MASSACHUSETTS

80,000 SPINDLE

QUISSETT MEANS QUALITY

We invite our readers to make use of this department for the discussion of any and all problems arising in connection with the knitting mill from the office to the packing and shipping departments. Questions, answers or letters need not conform to any particular style and will be properly edited before publishing. All questions will be answered as promptly as possible. The names and addresses of the contributors must be given, but will be held in confidence and a pen name substituted when printed. All accepted contributions other than questions will be paid for after publication. The editors do not hold themselves responsible for any statements of opinion or fact which may appear in this department unless so endorsed. This department is open to all.

Standard F Makes Drop Stitches in the Gore.

EDITOR COTTON:

We would like to ask the following question for discussion in "Knitting Kinks." We have been having some trouble with our Standard F machines leaving two or three drop-stitches in the gore, first one side and then the other. It looks as though the take-up was not working properly, leaving slack in the yarn. But we have gone over the take-up and adjusted the spring, and have adjusted the yarn carrier; in fact, we have made every adjustment we thought possible, but we still have from six to eight of these drop-stitches daily on one machine. Any information that any of your readers with experience along this line can give as to how we can prevent this trouble will be of interest to us. If further details are desired, we shall be glad to furnish them. T. H. R. (TENN.).

Overcoming Oil Spots.

EDITOR COTTON:

The style trend of hosiery this year is light colors. In order to obtain a product free of oil spots, which is certainly a most important feature in finishing, it is necessary to trace the cause of this defect and remedy the condition.

Speaking generally of circular hosiery machines, the supervisor of knitting in the mill must have the utmost cooperation of the dyeing and finishing departments in order to obtain results along this line. Oil spots are the results of many causes, and only by informing the knitting supervisors of the nature of the spots immediately when noticed, can results be obtained.

The following is a list of causes and their remedy, which I have found by experience, to take care of these spots:

1. A great many oil spots come from the hands of the machine adjusters who fix the machines. As a general rule all machinists' hands are oily and dirty, which usually comes from adjusting the machines. As a general rule they pick up with their hands every hose from the machine which needs adjusting, which, of course, results in a spot unless their hands are clean. Such jobs as pulling the chains around with the hands or adjusting the pawls result in grease on their hands.

Plenty of wiping rags should be on hand so they can get this grease off as much as possible. Also, I would suggest putting handles on one of the sprocket chain wheels so that the chain can be moved without soiling the hands.

One of the best investments a firm can make, unless they already have this, is a washroom near the knitting department, and the rule should be to wash the hands after every job which results in grease on the hands.

2. A machinist may be told many times to be careful of the way he oils his machines, or told of other things which are bound to cause oil spots, but he will not realize the seriousness of these suggestions unless he is given an opportunity to see the hose as they appear when finished. Let him see the result when the hose are finished, and he will do all he can to cooperate.

3. The way the operator hangs the work on the machine when in need of adjusting has a great deal to do with the oil spots. A hosiery machine, as a general rule, is bound to have oil on most any part of it. The policy should be to keep the work off the machines as soon as they are repaired. The writer has been through a mill where he has seen machines shut off, with the hose that had come off those particular machines thrown across the latch ring of the machine. This evidently was a display of the operators' temper, but, nevertheless, it is a source of some of the oil spots.

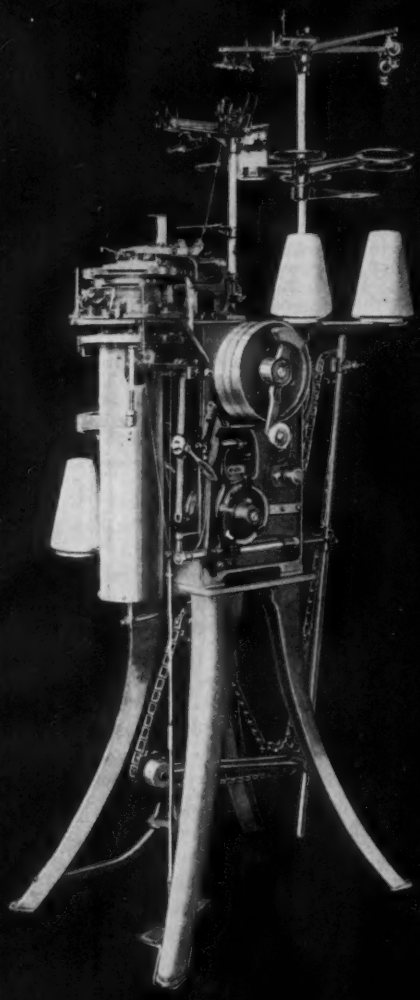
Hanging the hose on the retaining spring which holds the top of the machine, with the cylinder, is another source. This results in the bumper screws on the outside sinker top hitting the hose when making the reciprocating motion.

4. The oil used, of course, has a great deal to do with the spots. For instance, on a Scott & Williams Model K machine, if too much oil is put on the transfer bits when the machine transfers off the hem it leaves a black mark around the whole diameter of the hose.

Experimenting with the best grades of oil is about the best way until the proper kind is found.

Some machinists have the idea that the more oil they *splash* on the machines, the better they will run. This is not true. All the oil a machine needs is enough to lubricate the various parts so they will work freely. *Splashing* the machines, which I believe is a good term to use, judging from what I have seen some machinists do, is a hindrance to what we are striving to attain. A set of rules to be observed by all machinsts who do the oiling is the remedy.

5. Another and most important source, which is over-



Hosiery manufacturers using Wildman Spring Needle Knitters have seen remarkable results in production and quality.

WILDMAN
THE WORLD'S STANDARD

WILDMAN MANUFACTURING CO.
Norristown, Pa.

We have issued a new edition of the complete and informative book, "The Science of Knitting." Price, $2.00.

WILDMAN
SPRING NEEDLE KNITTER

looked by many mills, is oil dripping from the bottoms of cylinders into the work pans. This is especially true during the noon hour and at night, when the machines are left standing. If there are any stockings left in the work pans during these two periods oil spots will result. All hose should be out of the pans during noon hour and at night, and during the day, as fast as they drop off the machines. The work pans should be cleaned both morning and afternoon.

6. All work should be put in canvas bags when taken up, and left this way until they get to the gray stock.

RYMI.

Some Causes for Holes and Rough Places.

EDITOR COTTON:

One of the troublesome things about a knitting mill is being unable, frequently, to locate the cause of difficulties. We work around following out the logical leads sometimes, only to find that our problem was caused by something apparently not connected with the difficulty at all.

I remember reading some time ago in "Knitting Kinks" a letter from a man who said that after the peroxide bleach he encountered holes in the tops of ladies' silk stockings, and found out later they were caused from a mechanical source on the knitting machine, and not in the finishing, even though the stocking gave no appearance of being defective upon leaving the knitting machine.

That is the way these things go. I know. I suppose most of your readers are familiar with the fact that on the knitting machine the cylinder pin is held by screws, and if these protrude too far in they will jag the stocking and produce this same effect later on. In addition, underneath that, at the bottom of the circle, if the operator holds the top stationary, which must be done when starting the machine in order to get a clean transfer, unless this is kept polished off in good shape, there will be a tendency to nap or jag the product which will result in holes later on. This must be kept nicely polished. K. T. (Tenn.)

Preventing Corner Holes on RI Machines.

EDITOR COTTON:

I should like to know the causes and remedy for holes in the corners of the toe on material made on the Scott & Williams Model R I 3 3/4-inch, 160-needle machine. Any information as to ways for preventing this defect would be very much appreciated. I should like to state that the sinkers, needles and sinker cams have all been checked over. CONTRIBUTOR No. 4912.

EDITOR COTTON:

In response to the question of "Contributor No. 4912" with reference to holes in the corner of the toe on material made on Model R I Scott & Williams machine, I would suggest that he try changing the machine from the toe one rack sooner on the pattern chain to prevent picking all of the needles down on the cut side by adding to the front of the chain link. The Model R I machine uses a needle with a fairly large hook which does not easily pull through the tuck stitch in the corner if it is picked down. Using

STANDARD
MERCERIZED YARN

SPINNERS MERCERIZERS S-C-T CASSERS BLEACHERS

The combination of uniformity—Lustre and Strength, plus Economy in knitting represent the essential qualities of good mercerized yarns. STANDARD YARNS are recognized by these qualities.

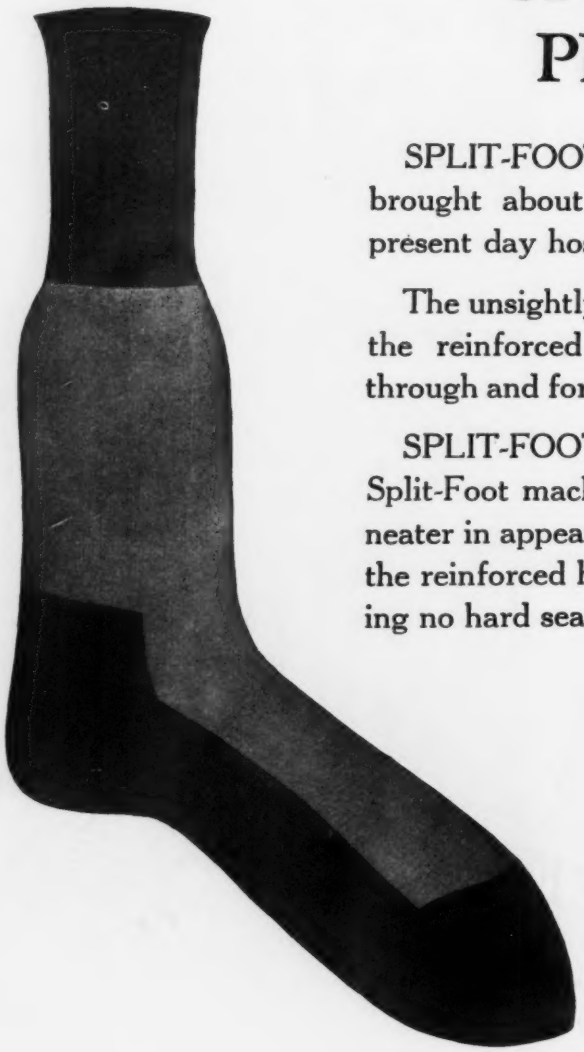
STANDARD-COOSA-THATCHER CO.
CHATTANOOGA, TENN.

Sales Office:
Lafayette Bldg., Philadelphia

Canadian Representative:
Wm. B. Stewart & Sons, Ltd., Toronto, Montreal

The "BANNER"

SPLIT-FOOT PRODUCT



SPLIT-FOOT HOSIERY, the new creation, brought about by the main disadvantage in present day hosiery, namely:

The unsightly inside fringe of splicing ends in the reinforced portion which tends to slip through and form whiskers on the outside.

SPLIT-FOOT hosiery made on "BANNER" Split-Foot machines is smoother on the inside, neater in appearance and has added strength at the reinforced high splice and double sole, having no hard seams.

WHY MAKE AN INFERIOR PRODUCT?

WE INVITE INQUIRIES

HEMPHILL COMPANY

Main Office and Factory

PAWTUCKET, RHODE ISLAND

New York Sales and Show Rooms
350 Broadway, N. Y.

Southern Office,
James Bldg., Chattanooga, Tenn.

Philadelphia Sales and Show Rooms
Colonial Trust Bldg., 13th and Market Sts.

for the end low butt needle one which has been polished by use in the machine and bending the hook slightly smaller should correct the difficulty if changing the chain link is not desired. Contributor No. 4404.

Trouble With the Striper or Yarn Changer.

Editor Cotton:

I want to ask the readers of "Knitting Kinks" to give me some assistance with reference to a difficulty we are experiencing on our Scott & Williams B-5 machines, equipped with the Scott & Williams striper or yarn changer, on fancy half-hose. Our trouble is in one yarn raising out before the next one catches, whereas, as your readers know, one yarn should catch before the previous one raises out. One way to help this might be to take a little off of the lug on the yarn changer drum, but I would like very much to have your readers offer any suggestions they can as to other and more effective ways by which we can get rid of this trouble, pointing out things to watch that might be causing this, and how to stop it.

Contributor No. 4673.

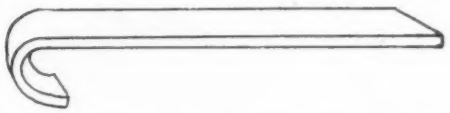
A Device for Loosening Chains.

Editor Cotton:

In tightening and loosening chains on hosiery machines, the pounding of the nut that holds the sprocket to the frame quite often results in splitting the frame at the bottom of the slot in which the sprocket rides. When this frame splits it is necessary to have it welded, or to tighten it up with wire, which is not good practice.

I have found that even if the machinists are instructed not to pound too hard on these sprockets, they will become broken just the same, from time to time, mainly when many changes are made in the chain lay-out.

I have made what I call a chain loosener, which is shown



in the accompanying sketch, for getting rid of this trouble. It is made out of a piece of heavy flat iron about ¼ inch thick and 1 inch wide and 12 inches long. The curved end of the loosener fits on the nut which holds the sprocket to the frame. This does away with the pounding; also, the chain can be loosened or tightened without much harm.

Contributor No. 4336.

Drop Stitches in the Looper Line.

Editor Cotton:

Why is it that sometimes on the Banner machine, making mercerized half-hose, that we will get a drop-stitch right on the looper line on the first round leaving the toe, making a mender?

I would appreciate it if some of your readers would tell us what might be causing this and how to stop it. I understand that it might be in the cam, or sometimes in the latch, but any information that some of "Knitting Kinks" readers can furnish will be of help to us.

Contributor No. 5432.

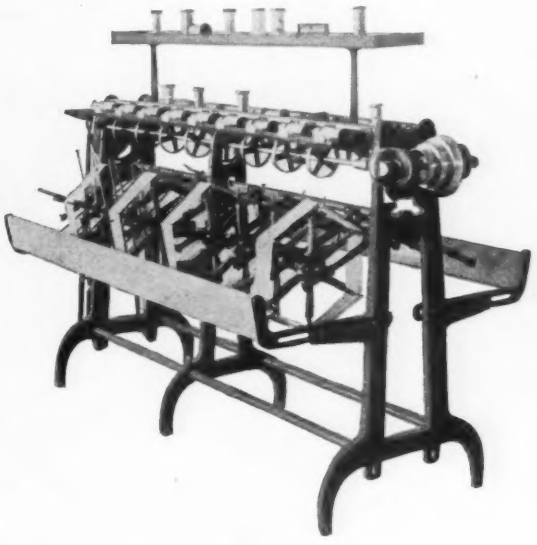
The 4F WINDER

A dependable, economical producer for the Cotton Manufacturer, equipped to wind hard or soft Silk, Rayon and fine Cotton yarns. Mechanically perfect, featuring motor attachments, spiral gear driven take-up shafts, patented geared swifts, adjustable cams and many other improvements.

The 5B Spinner

A combined Doubling and Twisting Frame for Tram Spinning,—hosiery threads in Silk, Silk and Cotton mixtures and Rayon—capable of handling materials from 2 to 14 threads.

For the last Sixty years we have been makers of the best machinery for the silk trade, including Winders, Spinners, Twisters, Reels, Doublers, Redraws, Warpers and other special textile machinery.

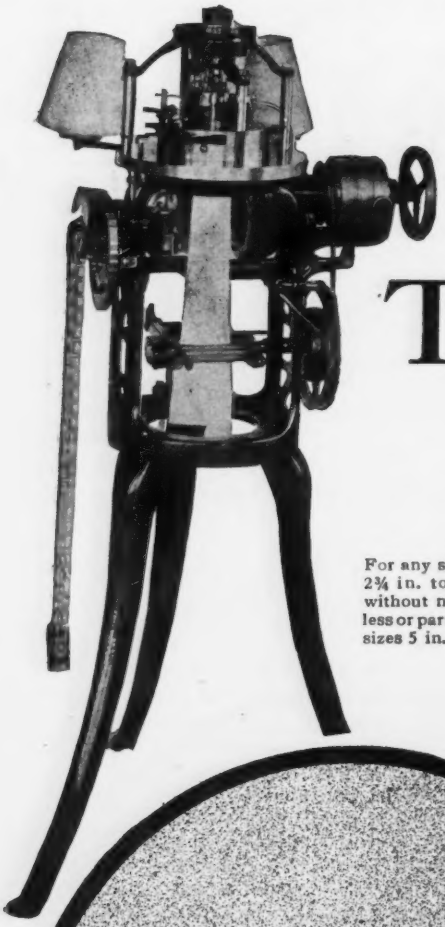


THE ATWOOD MACHINE COMPANY

Silk Throwing Machinery

Stonington, Conn. **95 Madison Avenue, New York City**

Southern Representative: H. L. McCALL, Cutler Bldg., Charlotte, N. C.



True Ribbed!

For any size from 2¾ in. to 4¾ in. without new dogless or parts. Other sizes 5 in. to 7 in.

FIDELITY

Universal Hosiery Ribber — the latest development in machinery for producing true-ribbed hosiery tops. Better tops—more of them —and at lower cost.

FIDELITY MACHINE COMPANY

3908-18 Frankford Avenue, Philadelphia, Pa.

120 Broadway
NEW YORK CITY

James Building
CHATTANOOGA, TENN.

Why Does the Rayon Look Fuzzy?

Editor Cotton:

May I ask the readers of "Knitting Kinks" using Banner machines to furnish me with some assistance on a problem we are having right now? We are making fancy half-hose from dyed yarns, and use the Banner horizontal striping attachment, securing the vertical stripe by using the forward and backward hook needle. What I want to know is why we get a fuzzy looking half-hose when plaiting 120 denier Viscose rayon or artificial silk on 70s/2 mercerized yarn, on the machine as indicated. Also, why does the artificial silk show up fuzzy, whereas pure silk run on the same machine does not produce this result? I know, of course, that it could be caused from having worn stitch cams, or from the thread being advanced too far over to the front of the mouth-piece, but I would like to have your readers give me any further suggestions as to how I can get rid of this fuzzy work. Contributor No. 4589.

Checking Production and Cost.

Editor Cotton:

The "Knitting Kinks" section has warmed up considerably, and in the June issue I note "J. D. D." shows that he has been through the mill and fully appreciates the life of a knitting machine fixer. The life of a fixer is hard at the best and he has to be in accord with his knitters, for if he growls at one that one can make his life miserable; it has been done many times.

When a fellow puts himself in the role of being a machine fixer he is taking in lots of territory and it is up to him to cover it. I am offering a system whereby the fixer can be checked up every day, and there is no better way to find out a thing than to keep records.

"J. D. D." says that some good fixers do not know how to handle their help. This is true in many cases, and a fixer like that should be trained to praise his knitters or else not have anything at all to say. If the fixer keeps up his machines he has very little time to talk. The practice of going from one machine to another and looking it over is the best way usually to keep down a bad job.

It has been and is the practice now in a great many places, to watch the clock and quit off a few minutes before each stopping time, never realizing how many minutes, twice each day, are being lost and the company losing on production. For instance, if ten persons quit five minutes before stopping time at noon, fifty minutes are lost that cannot be made up—just a loss, and nothing short of that, and for 500 people it certainly means something. The proper time to stop off is when the whistle blows. That is one reason for having a whistle, and if the people are not going to go by it, it would be better to take it off for repairs, as occasionally they do need repairing.

Now getting back to the system, the sheets can be made to suit, and anyone who feels like putting it into practice will know at any time just what a certain fixer and his section is doing.

I just wonder how many of the fixers have inspired their knitters to race with another section? That's a mighty good way to boost production. Most of our boss knitters and superintendents appreciate what fixers do and suggest; they have to have help all along. Just because a man is in charge does not signify that he knows it all.

RAYON YARNS

The *sizes* you need
80, 100, 150, 300 and 450 deniers.

The *quality* you need
A, B or C.

The *colors* you need
Natural or dyed in skeins, also fast colors.

Wound as you need them
On spools, tubes, cones, cops or bobbins.

When you need them
Deliveries begin within 48 hours after receipt of orders.

At the *right* price
Let us quote on your requirements.

UNITED STATES RAYON CORP.
RAYON YARNS
SECOND TO NONE LUSTREYARN
40-46 W. 25TH ST. NEW YORK, N. Y.

Brooklyn: 118 Greenpoint Ave. *Chicago:* 322 Wesut Van Buren St.
13 & 14 Aves. Railroad, Belmar N. J.

FIXER									WEEK ENDING						
STYLE	5	5½	6	6½	7	7½	8	8½	9	9½	10	10½	11	11½	TOTAL

INSPECTOR	FIRSTS
	SECONDS
	THIRDS
FOREMAN	WASTE
	FIXER'S SALARY
	INSPECTOR'S SALARY

	THIS SPACE IS FOR SHOWING FIGURES OF COST.
NEEDLES	
SINKERS	
JACKS	
BELT	
OIL	
TRANSFER POINTS	
CARRIER	
STITCH CAM	
GUARD CAM	SUPERINTENDENT
ETC.	

Knitting mill men all over the country are giving out the different systems in their mills, and it would be a mighty fine thing for every knitting mill man from the finisher to the rib runner to take Cotton and read the different views of all the contributors and make it a point to save this dope for future reference. W. H. H. (Ga.)

Yarn Selection and Use.

Editor Cotton:

In answer to Contributor No. 4353 concerning the best yarns used in making ladies' semi-fashioned, mercerized and ladies' rayon semi-fashoned hosiery, will say I have tried lots of mercerized yarns in my 30 years in the knitting room, and while I believe that any good quality of mercerized yarn will doubtless give satisfaction, there are always certain local conditions that perhaps make a man favor one yarn more than another. I know that I have a favorite make of yarn that I use because I believe it gives me less trouble than any yarn I have ever used on mercerized goods. However, that is a matter for the individual yarn user.

To get the best results on rayon is to buy it in hanks and wind it on small bobbins with a brass tip, and it should always be kept in a conditioning room in order to keep it from drying out. When rayon gets dry the machines will not run it without making a great many seconds and rags.

In regard to the cost of these goods without injuring the quality, Contributor No. 4353 did not state the weight of goods to be made, so I will take a stocking weighing 23 5/8 ounces per dozen on a 240-needle machine. The stocking is made of rayon and Japan two-strand silk. I will give the weight of each yarn going into these goods. Inside garter top 24s/1 ply double carded yarn 2⅞ ounces; garter top outside 60s/2 ply mercerized yarn, 5 ounces; heel and toe 70s/2 ply mercerized yarn, 3 1/4 ounces; double sole 70s/1 ply mercerized yarn, 7/8 ounces. Rayon, 9¾ ounces. Japan silk, 2-strand, 1⅞ ounces. Total of 23 5/8 ounces. This weight makes a neat, closely knit stitch, ankle very tight.

In regard to the slack course, it should be very small, just plain enough to be seen, and trimming should not be over 5/8 inch long. In making this hose, if the machines are in perfect condition, this can be made loose with a very close stitch without injuring the quality. In using the yarns mentioned in the garter top, a very close hem can be made. This stocking has a 22-inch boot.

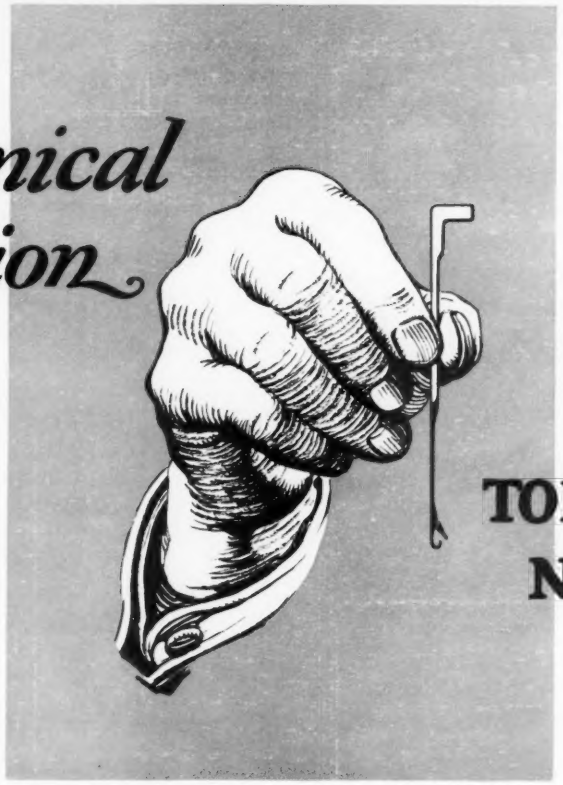
Contributor No. 23.

Editor Cotton:

In the February number of Cotton I notice that Contributor No. 4353 asks for points on the manufacturing of silk, rayon, and mercerized ladies' hose on Scott & Williams 3 1/2-inch 240-needle Model K machines.

First we will take the pure silk number and say, for instance, he desires a 10-strand 18-inch boot. To have a well-balanced stocking, the welt should be made of 60s/2 mercerized, 5 inches deep and rule 12 inches, when pulled out to the full capacity of the elasticity. The knee should

The Mechanical Perfection



of

TORRINGTON NEEDLES

From Handicraft to Machine craft

THE first Torrington (Excelsior) Needles were shaped by hand—with infinite patience and labor.

Continuous study and experiment, invention of machine after machine to reproduce accurately the master needle perfected by Torrington technicians—now provide the knitting industry with Torrington needles of astonishing exactness and excellence.

As an example of this, the hooks of a group of Torrington Latch Needles of a given type or size will line up with each other as they should. The reason for this is that automatic machines line these hooks up as the needles reach the final stage of their manufacture.

The TORRINGTON COMPANY

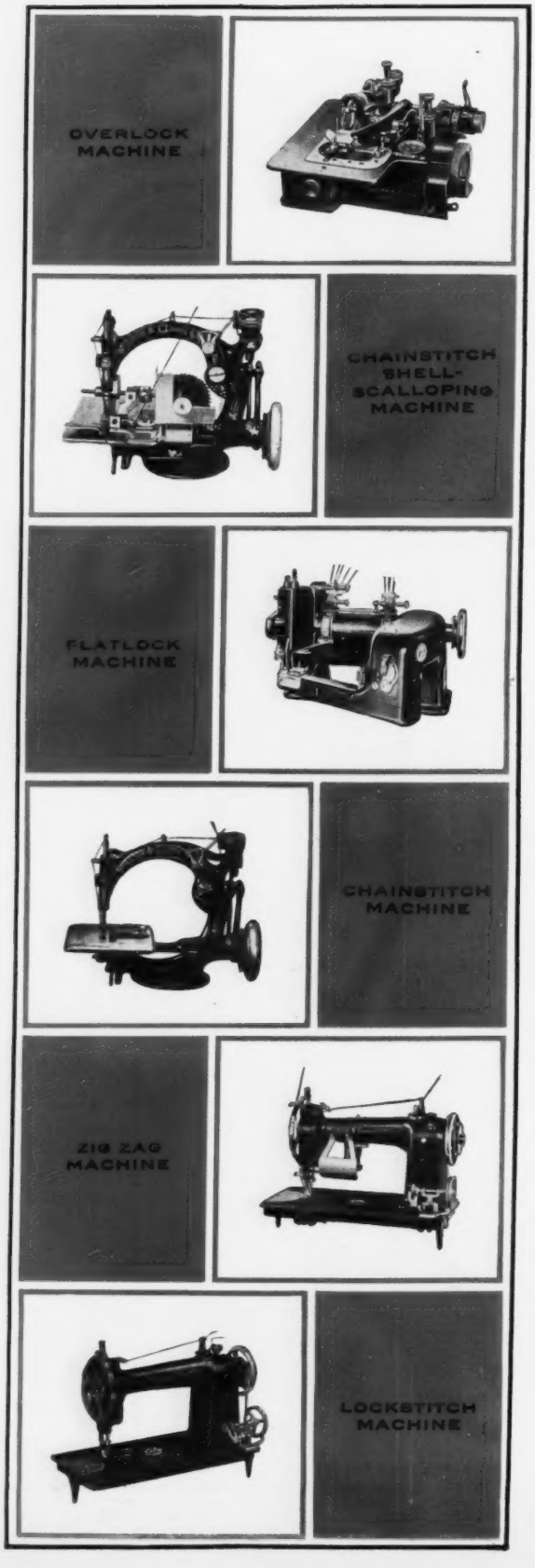
Torrington, Conn, U.S.A.

THE TORRINGTON COMPANY
CHERRY AND JUNIPER STS.
PHILADELPHIA

BRANCHES:
C. B. BARKER & CO., LTD.
140-144 W. 22ND STREET
NEW YORK

LOS FABRICANTES UNIDOS
964 CALLE BELGRANO
BUENOS AIRES

FACTORIES AT:
TORRINGTON, CONN.
UPPER BEDFORD, CANADA
COVENTRY, ENGLAND
AACHEN, GERMANY



Manufacturers in RAYON!

Willcox & Gibbs Machines *help put your production on a profitable basis*

THESE famous machines have helped to stabilize the demand for Rayon garments. Ability to create fine seaming and stitching has been their contribution to the industry.

This important part of your manufacturing operations can safely be entrusted to Willcox & Gibbs machines. The accuracy of this statement is being daily demonstrated on the production of leading brands. The reputation of the Willcox & Gibbs organization is an added guarantee of satisfaction. This company stands for leadership—for machine construction notable for excellent workmanship, economical high speed, and ability to stand up under severe usage.

The OVERLOCK SEAMING MACHINE for making seams that lie flat (without a ridge) to suit the daintiness of the fabric.

The OVERLOCK HEMMING MACHINE for making the elastic and concealed stitch hem.

The FLATLOCK MACHINE for making an absolutely flat seam, which also may be made specially ornamental by the use of sewing supplies varying in character and color.

The SHELL-SCALLOPING MACHINE that provides an attractive finish for the edges of shoulder straps. It makes the fabric of the garment provide its own trimming, and is not disturbed by laundering.

The ZIG ZAG MACHINE for forming an ornamental zig zag effect, for instance on shoulder straps, is appropriate and effective.

The CHAINSTITCH MACHINE with Registering Measuring Tension, for various stitching operations; for instance dividing bottom hem on bloomers for elastic heading, also for sewing on the labels.

The LOCKSTITCH MACHINE for sewing on shields, attaching shoulder straps, etc.

Write Dept. MTD for sample of stitches on Rayon

WILLCOX & GIBBS SEWING MACHINE CO.

Home Office: 658 Broadway, New York, N. Y.

Baltimore, Md. 321 No. Howard St.
Boston, Mass. 111 Summer St.
Chicago, Ill. 206 W. Monroe St.
Cincinnati, Ohio 206 West 7th St.
Cleveland, Ohio 340 The Arcade
Los Angeles, Cal. 938 Maple Ave.
Minneapolis, Minn. 118 South 8th St.
Newark, N. J. 524 Broad St.
Philadelphia, Pa. 131 South 12th St.
San Francisco, Cal. 504 Sutter St.
St. Louis, Mo. 209 No. 10th St.
Troy, N. Y. Fulton & Fourth Sts.
Washington, D. C. 702 10th St., N. W.

Canadian Representative: W. J. Westaway Co., Ltd., Hamilton and Montreal

WILLCOX & GIBBS SEWING MACHINE CO., Ltd.,
20 Fore Street, London, E. C. 2, England

Branches

Nottingham Leicester Birmingham Luton Manchester Leeds Glasgow Belfast
Paris Brussels Milan

rule 5 inches deep and stretch to 11 inches. This gives a 10-inch mercerized top and will require 8 ounces of mercerized yarn. The cost of this is of course based on the yarn market.

Next we will take the silk boot or body of the stocking. This should rule 17 inches from where the cotton and silk joins to the bottom of the heel. This should be knitted slightly looser down to where the machine starts graduating than the ankle and foot. The ankle and foot will stand about 44 courses to the inch without injury to the fabric. This will give a very neat and close fitting ankle, which is, in the present day, greatly in demand, and will require about 8 ounces of silk per dozen. When these hose have gone through the degumming bath they should finish with an 18-inch boot.

Next we will take the high splice and double sole. This should be 70s/1 mercerized. The high splice should be 2 inches, which will require one ounce.

Next the heel and toe. I would suggest two ends of 80s/2 mercerized, which will produce a four-thread heel and toe, which is stronger than one, two or three threads of the same size. This requires three ounces. The slack course should be kept about twice the size of the courses on each side of it.

The run out should rule about 3/4 inch.

Next we will take a combination of rayon and pure silk mixture, which is available twisted and on cones ready for the knitter. This, in my estimation, is as good as the plaited stocking, and can be produced for less cost, due to the fact that the left-overs or waste can be rewound and used again. There are other troubles which show up when plaiting, such as mis-plaits, break-outs, etc.

For this number I would suggest one end of 150 rayon and three threads of pure silk for the body. If a 20-inch boot is desired it will require about 12 ounces of this combination.

For the welt, I would suggest 50s/2 mercerized, which will require about 8 1/2 ounces per dozen if a 5-inch welt and a 3-inch knee is produced.

The heel and toe should be made of two ends of 70s/2 mercerized, using 3 1/4 ounces when a 12-course ring toe and a 36-course run out is produced.

A 70s/1 should be used in the high spliced heel and insole. This will require about one ounce. This stocking should not be knitted as tightly as a pure silk number. If it is, there will be more or less burst-outs in the boarding. I would suggest for the ankle and foot about 38 courses to the inch.

We will next take the mercerized number. If the inquirer desires a medium weight stocking, I would suggest that the entire stocking be made of 60s/2 mercerized except the heel and toe and double sole and high splice. This will require 17 ounces of 60s/2 for the top,, foot and body. The heel and toe should be made of two ends of 70s/2 mercerized, which will require three ounces when producing a 12-course ring toe and 36-course run out. The double sole and high splice should be made of 70s/1 mercerized, which will require about one ounce.

The standard length of all regular ladies' hose should be 28 inches when finished, and out sizes 31 inches.

If Contributor No. 4353 will get the price on these yarns it will be very easy to figure the cost of these materials, and if he desires, I can furnish him with the number of links which are necessary to produce the weights in each of these numbers. If he finds that he is benefited by these suggestions, I should like to hear from him through "Knitting Kinks." I think this department is of great service to every reader and textile man.

O. K. (Tenn.)

Long Loops With the Mock Seaming Attachment.

Editor Cotton:

Our biggest trouble right now is with making long loops with the mock seaming attachment on the Model K machine on ladies' hose. I have already read what several of your correspondents had to say in the May, 1925, issue, in "Knitting Kinks," about how to stop this trouble, but our difficulty seems to be of a different kind than those discussed then. When the seaming yarn drops into operation and the needle catches the yarn on the first round, the last end of the yarn does not slip out from under the yarn clamp, and instead of going under the dial the yarn goes between the dial and the dial cap, causing it to form these long loops. Some one might say that the dial was not set right, but in this case I know it was set properly. Any suggestions as to how to stop this trouble will be appreciated.

S. T. (Ga.).

Some Points on Plaiting.

Editor Cotton:

This letter will be devoted largely to a discussion of double sole plaiting and other plaiting, and if, after reading it, any of your readers have any comments or further ideas along this line, I should like to see them.

One thing that causes mis-plaiting, in my opinion, is for the double sole yarn to drag on the bottom of the throat plate, and with used fingers I think this condition is pretty general. My solution with an old finger is to raise it about 1/32 to 1/16 inch above the bottom of the throat plate, and I do this by using a regular 260-needle cylinder jack, which is just about the right thickness. I solder this in the bottom of the throat plate for the heel of the double sole yarn finger to rest on. As a general rule, the heel of a new finger is high enough to let the finger feed the yarn to where it doesn't drag, but I have this trouble with worn fingers, and solve it in the manner mentioned.

I find, too, that it helps to set the left-hand sinker cam that knits the leg, to make it carry the throat of the sinker just something like 1/64 inch beyond the back of the needle on the inside, setting the right-hand cam medium. This seems to roll the stitch in and makes the yarn plait much better. On the bumpers, I have as much as two sinkers in when the needle gets to the top of the brass. Coming up, I put the machine on the heel and toe motion and raise the latchring and set as indicated.

I will close with the following suggestion on plaiting. There are five yarn fingers on the machine, and I find it best to proceed as follows: In the No. 1 finger I run the double sole yarn out of cotton. Then in the No. 2 I run the yarn for the inside of the welt. In the No. 3 finger, I put the heel and toe yarn. In the No. 4 finger, I use the back hole for the artificial silk yarn and the pure silk in the front hole. The yarn for the outside of the welt and the leg goes in No. 5 finger. This helps to make the yarn change more accurate and aids in making a better welt.

How White is the "Driven Snow"?

It can only be compared with Solozone-Bleached Goods

(A permanent white without weakening, soft, odorless and elastic)

Send for any of these interesting Booklets

"Make your own Liquid Peroxide"

"Efficient and Economical Bleaching"

"The Public want better Bleached Goods—Where can they get them?"

R&H CHEMICALS

We are equipped to process sample lots of any size under mill conditions and instruct the bleacher

The ROESSLER & HASSLACHER CHEMICAL CO.
713 Sixth Avenue
New York

It will not cause the presser to cut holes in the welt in the last two revolutions that the sliding cam is working. If I am plaiting artificial and pure silk, I run the artificial in the back hole in the No. 4 finger; with mercerized and artificial silk, I put the mercerized in the back; with cotton and silk, I put the cotton in the back, and the silk in the front hole of the same No. 4 finger. I always use all the friction possible on the silk yarn, and just as little as possible on the artificial or whatever yarn is being plaited on.

T. F. R. (Ga.).

300-Needle Machines on Chiffon Hosiery.

EDITOR COTTON:

We would be very glad if you could publish in your knitting discussion department some information from mill men who are using the new 300-needle Scott & Williams machine for chiffon hosiery. An outline of a mill"s experience with this machine as compared with the customary types should be of interest. We use the 240-needle machine. It sems to me that on a 300-needle machine the transfer jack needles would be in such close contact with one another that they would give considerable trouble on the welt. If you could get some mill man to furnish some dope on this point, and give other observations gained from using this machine, I am sure your readers would be glad to see it.

T. R. P. (Tenn.).

Holes Appearing After Peroxide Bleach.

Editor's Note—A mill manufacturing cashmere hose recently submitted a sample of their product in which appeared holes which did not show up until after the peroxide bleaching process. These hose were made from first-grade English cashmere yarn, and when the goods were knit they appeared absolutely perfect. They were later put through a peroxide bleaching process, and when boarded up on the hosiery boards, the manager noticed they were full of holes. He wanted to know whether this difficulty was caused in the knitting of the goods or in the process of finishing. The samples were submitted to two leading factors in the industry, and their replies are appended. If other readers have had similar experiences, this department would appreciate hearing from them as to how their difficulties were solved. The answers received follow:

EDITOR COTTON:

I have read the question from your reader regarding the possible cause of holes appearing in his first-grade English cashmere hose following the peroxide bleach, whereas the goods appear perfect when taken from the knitting machine. I also examined the samples which he sent and which were forwarded to me.

From the information furnished, my conclusion is that some particles of rust in the bleach bath possibly caused the holes in the goods, as this will happen with a peroxide bleach. A peroxide bleach bath should be free from all particles of iron, the acid used should be free from iron, and the bath should be neutral to litmus paper tests.

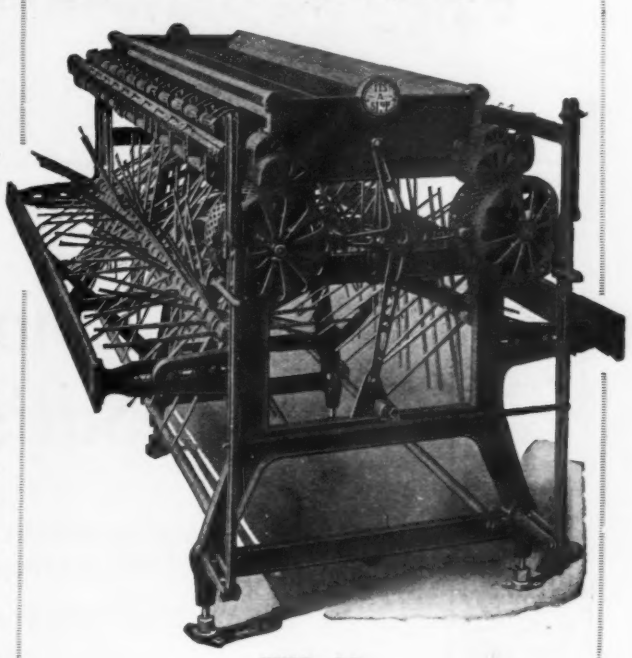
One thing that leads me to believe that the holes were partly caused in the knitting or other processing before bleaching, and not showing up until bleached, is the fact that on the sample of ribbed hose which he sent, three holes occur on the same wale. That is, the yarn might have been partly cut in making, and in going through the

WINDING

Warping and Special Machinery

FOR RAYON

The Ideal Winder for Rayon. Can also be used for Silks and Single Mercerized Yarns.



TYPE—BO

Steel pipe frame construction and patented rigid traverse motion

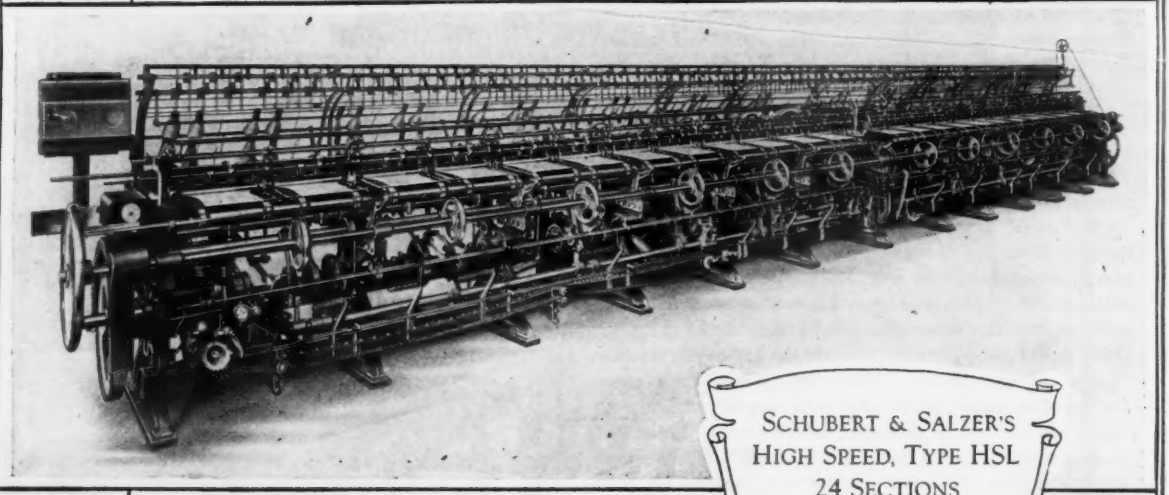
An interesting model can be seen and explained at our office

THE SIPP MACHINE CO.

PATERSON ITS A TRADE MARK SIPP NEW JERSEY

Southern Representative:
G. G. SLAUGHTER
Johnston Bldg., Charlotte, N. C.

"Full Fashioned Hosiery Machines"



SCHUBERT & SALZER'S
HIGH SPEED, TYPE HSL
24 SECTIONS

The Utmost In Satisfaction

The preferred equipment for maximum production (on a quality basis), at lowest operating cost is—

SCHUBERT AND SALZER
TYPE HSL HIGH SPEED
FULL FASHIONED HOSIERY MACHINES

Maximum production is guaranteed by 24-section machines which produce up to 65 courses per minute. With such machines the operating cost is bound to be lower.

These machines are being used in ever-increasing numbers. Let us arrange for a demonstration at some point near you.

ALFRED HOFMANN, INC.

West New York *New Jersey*

bleach bath the usual shrinkage of this material, together with abrasion due to handling, might have made an already partly cut or broken yarn pull entirely apart, thereby making the hole show up after what was apparently a perfect hose in the grey. Contributor No. 4631.

Editor Cotton:

We have made a very careful examination of the English cashmere hose which one of your correspondents sent in because of holes appearing in the fabric after bleaching. He stated that the goods came off the knitting machine in apparently perfect condition, but that these holes developed after the finishing. We have tested this hosiery by analytic extraction, also mechanical and microscopical. So far as we can find, there appears to be no tenderness or weakness around the holes, which indicates that they are not due to the chemicals used, but are probably the result of some mechanical trouble. If these holes were due to the chemicals, there certainly would be indications throughout the stocking, but outside of these particular spots we can find no weakness.

I would suggest that this man examine his latches carefully, and also go over all his tubs for nails and splinters. I have seen the holes caused by sharp sticks used in bleaching, and also by nails, splinters and friction.

So far as any suggestions are concerned, I can only repeat what I have already said—go all over everything and see that there are no broken or ragged spots in the apparatus. Contributor No. 4412.

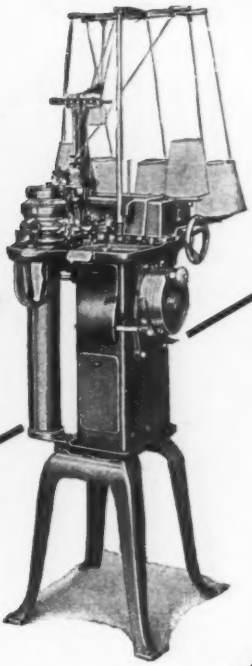
Among the Knitting Mills.

In order to shorten the distance between source of production and the consumer, the Dexdale Hosiery Mills, Lansdale, Pa., have established a retail hosiery shop in the Philadelphia shopping center, which is believed in the trade to be the first of a chain of stores for the exclusive sales of women's full-fashioned silk stockings made by the Dexdale. The company, a million-dollar corporation, makes both full-fashioned and seamless.

The Schuylkill Valley Mills, Inc., Spring City, Pa., women's full-fashioned silk hosiery, sold direct to retailers, is building a three-story-and-basement addition which will provide 25,000 square feet of floor space. Additional full-fashioned equipment will be installed. The company operates a motorbus line for carrying operatives to and from Spring City, an industrial town where supply of mill help falls short of needs.

Since a change in train schedules on a branch of the Reading road, the Berkshire Knitting Mills, Reading, Pa., is able to better maintain a full complement of full-fashioned knitters and learners and keep the enlarged plant operating to capacity. Some of the commuters are drawn from seamless hosiery mills in a half dozen towns along the railroad within ten or twelve miles of the company's mill, adjacent to a train station. Several full-fashioned mills which train help, from the ground up, and through the several operations between start and finish, have waiting list of applicants for positions as learners.

The Co-Ed Knitting Mills, Philadelphia, women's full-fashioned silk hosiery, will shortly occupy a new addition by which its capacity will be more than doubled. The company, sold tight to June, is operating with two shifts of help. It is stated that with occupancy of the addition the Knitters' Union will ban night work.



Cold Facts Tell You

!

IF you are not quite sure which knitting machines are most popular, study the sales records made by various companies in the past years.

You'll find that Brinton machines were one of the pioneers in the field—they were first made over thirty years ago. You will find, also, that Brinton machines are used in every textile center in the world and that their popularity is world wide.

There's a reason for this popularity—Brinton machines *give the service.* If you have not investigated, ask for our catalogue describing the complete line; ribbers, hosiery machines, body machines, toque, sweater, scarf machines, etc., yours for the asking.

H. BRINTON CO., PHILA., PA

CIRCULAR KNITTING MACHINES

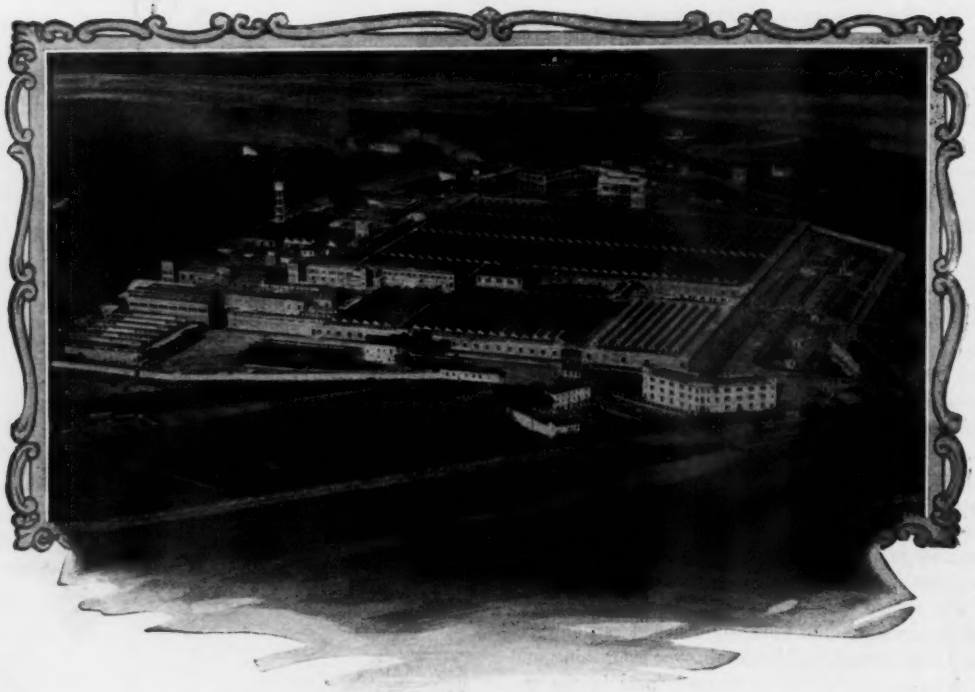
BRINTON

South America
Santiago Scotto,
Galeno Guemes,
Buenos Aires,
Argentine Republic

Foreign Agents

China & Japan
Elbrook, Inc.,
51 Kiangse Road,
Shanghai, China

Great Britain and the Continent
Wildt & Co., Ltd., Leicester, Eng.
Australia: J. H. Butler & Co., Sydney, Melbourne



The Venaria plant of the
SNIA-VISCOSA COMPANY
(RAYON DIVISION)

THIS modernly equipped plant for the manufacture of Mistletoe Brand Rayon, at Venaria, Italy, is only one of the Snia-Viscosa units. It is believed to be the largest Rayon manufacturing unit in existence, having a daily capacity of 66,000 pounds.

The resources of the Snia-Viscosa Company–symbolized by an unusually large organization and facilities–assure users of a regular supply of Mistletoe Rayon.

The well equipped Commercial Fibre converting plant at Passaic, N. J., enables us to meet your requirements for Rayon, thrown, dyed or in the natural.

NOTE:

In addition to *Viscose Rayon,* we are now prepared to submit samples and quote on 60 to 150 denier sizes of *Nitro-Cellulose Rayon,* made according to the most generally accepted alcohol process, the excellence of which, for special requirements, is well known to American manufacturers.

SNIA-VISCOSA

CHEMICAL TEXTILES

TRADE MARK REG.

COMMERCIAL FIBRE CO. *of America, Inc.*

General Offices: 15 East 26th St., New York City *Converting Mills:* Passaic, N. J.

TELEPHONE: ASHLAND 9150

REPRESENTATIVES:

Wm. G. Burke, Reading, Pa. Walter Schmaedig, Philadelphia, Pa. Geo. J. Loerzel, Chicago, Ill.
Wm. Wulfers, Providence, R. I. H. T. Cosby, Charlotte, N. C. and Chattanooga, Tenn.
Commercial Trading Corporation, Ltd., Toronto, Can.

AMERICAN YARN & PROCESSING CO.

MOUNT HOLLY, N. C.

SPINNERS AND MERCERIZERS

HIGH GRADE COMBED AND CARDED YARNS—16s to 80s

Our Mercerized Yarns Are the Product of Our Own Mills

General Office, Mt. Holly, N. C.

Representatives

E. D. McDONALD,
James Bldg.,
Chattanooga, Tenn.

G. J. LORENZEL,
166 West Jackson Blvd.,
Chicago, Ills.

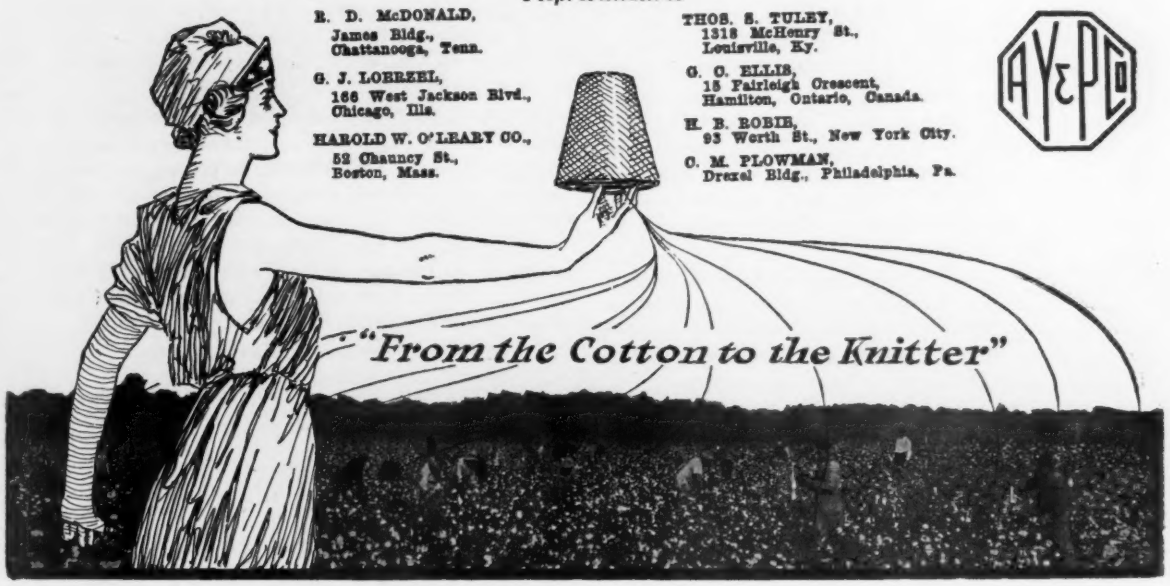
HAROLD W. O'LEARY CO.,
52 Chauncy St.,
Boston, Mass.

THOS. S. TULEY,
1318 McHenry St.,
Louisville, Ky.

G. C. ELLIS,
15 Fairleigh Crescent,
Hamilton, Ontario, Canada.

H. B. ROBIE,
93 Worth St., New York City.

C. M. PLOWMAN,
Drexel Bldg., Philadelphia, Pa.



A manufacturer of seamless hosiery in Reading contemplates establishing a branch in the South, the intention being to finish the output in the mill in Reading. Among the offered sites which it was planned to inspect is one in Nashville, Tenn.

So many young men and women are going into employment in full-fashioned hosiery mills in certain cities in the North to learn knitting that, it is stated, the effect is to check migration of knitters from the South. Learners in some mills go through a course in topping, as well as other operations, so that they may be available for either of several kinds of work in the event of emergency. In one mill where overtime work is necessary for the time, and women cannot be employed nights except in violation of a state law, young men have been drilled in topping, and when not so employed, are put to work as knitters when there is an abundance of toppers and a scarcity of knitters.

Paramount Hosiery Mills, Houston, Texas, have been incorporated for $10,000. Edward Peterson, 4010½ Wilmer St. ,has a plant on Franklin Ave., and is interested in the new company, which, it is understood, will install additional machinery.

It is reported that the Priester Hosiery Mills, Jackson, Tenn., will enter into the manufacture of silk hosiery, in addition to their present cotton lines.

McKinney Hosiery Co., Inc., Henderson, N. C., has begun operations, with a daily production of 100 dozen pairs of mens' and women's hosiery. It is understood considerable productive expansion will be made, and that dyeing and finishing equipment will be installed.

Williamsburg Knitting Mill Co., Williamsburg, Ky., have purchased dyeing and finishing equipment for handling their men's and women's hosiery.

According to rumors, the Cartersville Mills, Inc., Cartersville, Ga., are contemplating another underwear mill there.

Vance Hosiery Company, Kernersville, N. C., are doubling the capacity of the plant.

Washington Hosiery Mills, Nashville, Tenn., have increased their capital to $200,000, and will erect an addition to provide for an increase in capacity to bring the daily output to 1,500 pairs of hosiery.

Houston Hosiery Mills, Houston, Tex., have been incorporated with a capital of $25.500. Men's cotton hose are being manufactured. Officers are L. A. Parsons, president, and J. A. Tennant, vice president.

The Edward S. Reid Company of Charlotte, N. C., has recently been appointed as representative for the United States Rayon Corporation of New York City.

The United States Rayon Corporation has mills in Belmar, New Jersey; Brooklyn, New York; New York City and Chicago, Illinois, and are direct importers of rayon yarns from Europe. They have their own dyeing and winding plants and it is only recently that they have decided to cater to the southern trade.

M. Senor, the secretary of this concern, spent a couple of weeks in North and South Carolina recently, and if the demand continues to increase proportionately during the next few weeks as the past orders have indicated, it is probable that the corporation will open a mill in that section to do their dyeing and winding direct for their customers.

The Yarn Market

Philadelphia, Pa., March 16th, 1926.

Although from a standpoint of activity the Philadelphia cotton yarn market presents no especial attractions for this report, still several important angles which were discussed during the past month in various portions of the trade provide some interesting ideas and opinions.

So far as business is concerned, the past month has rocked along in a manner which "dull and sluggish" would cover as well as any other brief expression. The majority of the business handled appeared to come in lots of five and ten thousand pounds, and this seemed to be fairly well distributed over the list of counts handled here as well as among the different dealers interested, so that it was a general condition of affairs not confined to any particular group of yarns or houses.

Thus, market conditions continue in the same category they have occupied for some months—ever since the buyers adopted the policy of placing yarn orders when business came their way, and not before, and purchasing very little yarn for future delivery or on long-time contracts.

Co-incident with the extended lull in business, prices during the past month have shown a decline, bringing the rates in some cases down to the previous low levels of last December. No widespread response in the way of orders has resulted following the price parings, and factors believe that cheapness in rates is not the necessary impetus to induce a general renewal of old-fashioned buying.

In fact, among the trade it is the concensus of opinion that the methods of buying yarn have been more or less temporarily changed, following the practice practically forced on consumers of taking yarns as orders came in. They have found yarns available under conditions of this kind, and find the method convenient, and it is believed that it will be pursued for some time, unless radical developments occur.

With this condition existing generally, some factors express the opinion that material improvement in yarn demand may be looked for when the purchasing of cotton goods and other materials into which yarns enter as component parts assumes an increased magnitude. A laxity of interest in cotton products now is responsible in a large measure for the deflated yarn business, it is felt by many, and when business picks up with the consumers customers, the activity will be reflected back into the yarn market, as it will be shown also in other textile branches of manufacture, these factors explain. Just what it will take to reawaken a more widespread interest in cottons is a matter of conjecture, of course, while those expressing this opinion contend that with cotton rates at a still lower level, activity in cotton marts will show a healthful result.

Certain it is, at any rate, that concessions in price made locally in this market have not proved to be very noticeable attractions so far as producing business is concerned, buyers seem to consider the reductions as the beginning of a ride downward, or else are not interested in the event other than productive reports from their own selling organizations.

One feature which has been discussed as having a probable effect upon the reduced yarn turnover in this market is the understanding that a number of spinning mills, particularly those making yarns for the hosiery and underwear knitting trades, are going to their ultimate customers direct, the yarns not passing through the customary channels of this market. The trend in this direction, however, is not seriously worrying the local market factors, interviews have brought out, as the general belief is that "sooner or later both the spinner and the customer will re-awaken to a recognition of the importance played by the reliable, experienced and well-equipped middleman in the scheme of textile distribution.

Within the past few days reports have been current that spinners in the southern section have begun to reduce production more or less noticeably to prevent the accumulation of an unmovable surplus of yarn in the Spring. Certain factors point out that since the Government operation figures of the yarn spinners and their customers show production on the part of the former considerably in exces of the normal operation of the yarn users, this would, within reasonable limitations, seem a wise move.

Philadelphia quotations on March 16 follow:

Single Skeins.

4s to 8s.....31	10s.....31½
12s.....32	14s.....32½
16s.....33	20s.....34
24s.....36½	26s.....38
30s.....40	

Single Warps

8s.....32	10s.....32½
12s.....33	14s.....33½
16s.....34	20s.....35
26s.....39	30s.....41
40s.....51	

Carpet and Upholstery Yarns in Skeins.

8s 3-4 hard white warp twist.....30
5s and 9s 3-4 tinged tube.....27½
8s 3-4 hard twist waste.....26½

Two-Ply Skeins.

8s.....31	10s.....31½ @32
12s.....32½	14s.....33
16s.....34	20s.....35
24s.....38	26s.....39
30s.....41	40s.....49

Two-Ply Warps.

8s.....32½	10s.....33
12s.....33½	14s.....34
16s.....34½	20s.....35 @35¼
24s.....38	26s.....39
30s.....41 @41½	40s.....52

Frame Spun Carded Yarn on Cones.

8s.....31½	10s.....32
12s.....32	14s.....33
14s.....33	16s.....33½
18s.....34	20s.....34½
22s.....35	24s.....36½ @37
26s.....37½ @38	30s.....39
40s.....50 @51	
30s double carded.41	30s tying-in.....38½ @39

Two-Ply Combed Peeler Skeins and Warps.

8s to 16s 51	20s.....52
24s.....55	30s.....56
40s.....64	50s.....69
60s.....77 @80	70s.....87 @90
80s.....1.02 @ 1.05	

Single Combed Peeler Yarn in Cones

18s.....45	24s.....48
30s.....54	36s.....60
38s.....62	40s.....65

Mule Spun Carded Yarn on Cones.

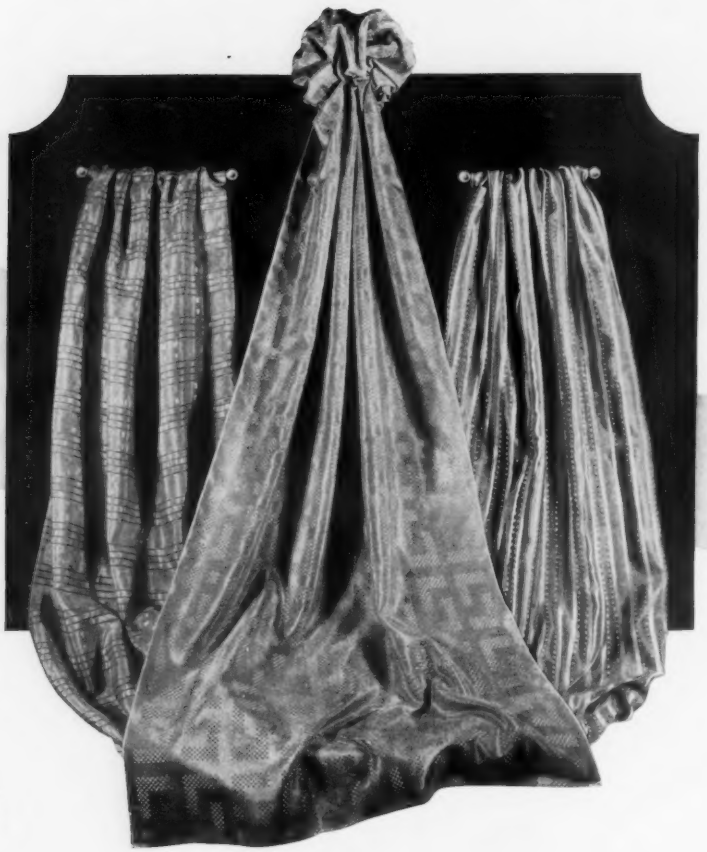
10s.....37	12s.....38
14s.....39	16s.....40
18s.....41	20s.....42
24s.....43	26s.....43½
30s.....45	40s.....55

Mule Spun Combed Peeelr Yarn on Cones.

10s.....46	12s.....47
14s.....48	16s.....49
18s.....50	20s.....51
22s.....52	26s.....55
28s.....56	30s.....57
36s.....59	38s.....62
40s.....67	

The location of the southern office of Penick & Ford Sales Company, Inc., has been removed from Greenville, S. C., to 206 Andrews Law Building, Spartanburg, S. C. Guy L. Morrison is southern representative. J. Hudson Almand represents the company with headquarters in Atlanta at 1305 Healey Building.

Produced on the
No. 60-GF Universal
Winding Machine
LEESONA
REG. U. S. PAT. OFF.
"Uni-form"
Cones
"Uni-form" Hosiery Cone. 6" Traverse; maximum diameter, 8"; net weight of yarn, up to three pounds.
"Uni-form" Warping Cone. 6" Traverse; maximum diameter, 8"; net weight of yarn, up to 4¼ pounds.
Firm, Uniform tension packages that afford the best possible delivery in mill practice.
Universal Winding has helped materially in effecting valuable economies and improvements in almost every branch of textile manufacture. The development of the No. 60-GF Universal Machine for winding "Uni-form" cones is one of several that directly concerns knitting mills.
UNIVERSAL WINDING COMPANY
Providence
Chicago
Utica
New York
BOSTON
Philadelphia
Charlotte
Atlanta
Montreal and Hamilton, Canada
Depots and Offices at Manchester and Paris
UNIVERSAL
WINDING



For

Cotton-Rayon Dress Goods

"Industrial" Rayon

FOR adding beauty, style and novelty to fine cotton goods "Industrial" Rayon has proved itself an ideal fibre, and has gained a permanent and important position in many mills. It is strong, even, and has unusual covering power. It takes the dye evenly and finishes beautifully in the fabric.

A member of our Service Department, who has been unusually successful in the weaving and finishing of cotton-rayon combinations, will be glad to call upon you and give you, in a practical way, the benefit of his knowledge and experience.

"Industrial" Rayon is supplied in skeins or on cops, dyed or in the natural.

The INDUSTRIAL FIBRE COMPANY *Inc.*

148 MADISON AVENUE

NEW YORK CITY

Sales Representatives:

T. E. Hatch Co., Boston Mass. J. P. Dignan, Gloversville, N. Y. Glenn Commission Co., Richmond, Va. E. W. Knapp, Philadelphia, Pa. O. J. Caron, Chicago, Ill.

The Knit Goods Market

Reports of many of the transactions in the hosiery primary market leave the inference a large part of the jobber body is making retailer commitments, and that an equal proportion of the retailers operate about as freely as does the average person buying for his or her individual use. Orders total big in the aggregate, but the units are small. A direct-to-retailer manufacturer to March 1 had shipped out more hosiery than for the corresponding period running back over many years, but, says an executive, almost every order taken involved more real hard work than ordinarily, and, in the circumstance, there has been an increase in the cost of selling.

Shops where womens' silk hosiery is sold have multiplied until they probably outnumber the retail cigar stores and the places where formerly the thirsty or otherwise bibulously inclined were wont to drop in. This serves to promote the retail sales of hosiery, and, in the competition which, in sequence, becomes keener, retailer profits per unit have shrunken, and distributors therefore are constantly exerting pressure for lower prices. Manufacturers as a whole have a larger aggregate volume of sales, but the business must be distributed among more mills, and numbers are not getting their share on a pro rata basis.

There is considerable idle circular hosiery machinery in Pennsylvania, according to reports from selling agents for widely scattered establishments, and it appears that manufacturers not favorably situated as to production cost are in need of business, regardless of where they may be located, so that Pennsylvania is no different in this respect from other hosiery manufacturing centers.

It appears that jobbers have been lacking in confidence in values. Anticipating lower prices in the raw material markets, they have sought to restrict purchases to a few weeks' needs. Gossipy reports of a reduction in prices of rayon had the effect of putting a damper on operations in rayon hosiery. As silk has been slipping for some weeks and the trade had visions of further declines, silk hosiery contracting was restricted to prospective Spring requirements, leaving needs for Summer to be taken care of after Easter was assumed to have set the color style.

Advance buying of novelty stockings has been and will be materially narrowed in volume, dealers striving to have new patterns coming in while a few pairs of old ones remain on their shelves. Divisions in hosiery which escaped falling under the spell of jobber distrust are the sports and juvenile, and, of course, women's full-fashioned silk. But even the latter is to be had in greater quantity for immediate delivery, and "special" prices in some department stores and women's shops force the conclusion that somewhere shrewd buyers are able to locate bargains. Not in many years has Easter hosiery been available to shoppers at the advantageous prices prevailing last month. But that is in the past, and now the markets are buckled down for trading as usual.

Cotton, silk and wool have had their squeeze. Stagnation in finished goods obviously would subject these raw materials to further pressure. So far as relates to volume in the aggregate, there is seen no prospect of lessened consumption of the raw fibers, the supplies of which should be the controlling factor in establishing values. While this applies to rayon as well as to silk, cotton and wool, so far as concerns existing stocks, the increase in domestic production of rayon is an unknown quantity, and there is an enormous foreign output to be taken into consideration. A greater degree of confidence would pervade the manufacturing and distributing trades if rayon prices were fixed for a reasonable period and there were assurances they would stay fixed. The wholesale markets are waiting for a semblance of stability for the signal to go ahead.

There are three specific questions heard in the trade when the markets of the near future are discussed. They are: 1. Does the expansion in the full-fashioned hosiery industry point to excess production? 2: Will novelty half-hose hold the strong position at present indicated? 3: What is the prospect for wool hose for men, women and children for next Fall and Winter?

According to the calculations of persons believed to have an intimate knowledge of the number of active full-fashioned machines and new equipment to be installed by the end of the year, over-production is some distance in the future, and need not be taken into consideration as a development of 1926, except insofar as consumption may be affected by the use of circular knit.

The president of a new company which will have a down-to-the-minute mill in operation in the next month or two says he has figures to show that there was produced last year only one pair of women's full-fashioned silk hose for every woman and girl of silk stocking age. Figuring on the installation of 300 machines, this manufacturer says there still would be less than two pairs per capita, and he believes the increase in output would be no greater, relatively, than the additions to users of full-fashioned. But, like the banker offering a bond for investment, he "does not guarantee the information, although believing it to be accurate."

Manufacturer confidence in full-fashioned is clearly indicated in the plant additions being made by numbers of seasoned mill managers who are perhaps safer forecasters than the man with statistics but little or no experience as a manufacturer and distributor. Most mills are operating to capacity and selling their production, and several last month were buying silk hosiery in the gray. Careful inquiry into the wholesale markets and among mill owners discloses no factory in distress for lack of business. But there is revealed dissatisfaction with piecemeal buying by the establishments which ordinarily are not in the market after each day of ideal shopping weather. A department store, that is larger than most of the hosiery mills, is a constant buyer of 10 to 30 dozen lots of full-fashioned supplies a fair illustration of the extent to which distributors will go in leaving it to mills to carry stocks for them. In one of the more important wholesale cities jobbers are, as a class, buying case lots, it is stated by manufacturers having close relations with them. Merchandising by such methods is about all that ails the hosiery primary markets.

Consumption of silk hosiery will depend in considerable measure on the extent to which chiffons continue in favor, as, necessarily, their duration of service is shorter than that of the service weight, probably two pair of 5-strand being required as against one of 11-strand. Thus far the chiffon is the more popular stocking, but there are strong intimations of a shifting to medium weight

ABERFOYLE MANUFACTURING COMPANY

MERCERIZED YARNS

Main Office
Bankers Trust Bldg.
PHILADELPHIA

JAMES BUILDING
CHATTANOOGA, TENN.

READING, PA.

ADAMS-FRANKLIN BUILDING
CHICAGO

Mills
CHESTER, PA.

JOHNSTON BLDG.
CHARLOTTE, N. C.

WESTAWAY BUILDING
HAMILTON, CANADA

Single Yarns
Mercerized
Bleached and Dyed
on Cones

THE ELMORE COMPANY
MERCERIZED
YARNS
Spindale
N.C.

Specializing in Fugitive Shades
for Plaiting and Splicing

The ELMORE Co.

Spindale, N. C.

Selling Agents COTTON PRODUCTS CO., Bankers Trust Bldg., Philadelphia

fabric—say, seven to 8-strand, the latter already being used extensively as a price expedient.

Comparatively few of the patrons of some of the more exclusive women's shops use chiffons, it is stated by the buyers of these establishments. This is probably due to the fact that the chiffon stocking may be regarded as having become commonplace. Aside from this view, however, there seems to be a feeling in the trade that fewer will be worn during the coming Summer than in the Summer of last year.

Whether of the sheer or of service weight, the silk-to-top stocking is displacing the standard 20-1 inch boot, and 24-inch silk boot hose is in good demand as a compromise on a piece of legwear conforming to the brevity of the skirt. In favor of the all-over silk chiffon is the fact it is available in many first-class retail stores at about the price of a 20-inch boot in service weight a year ago, and as if to make it more interesting to woman, a silk-to-top is to be had at a dollar a pair from retailers drawing supplies direct from a manufacturer of latch needle hose. The lower all-round prices have done much to increase sales of full-fashioned hose, and now that the seamless is coming out at a much less figure, relatively, the outlook seems to be for the practical elimination of hosiery not of at least in part silk construction.

For several months, until quite recently, most manufacturers of latch needle silk hosiery have been very much in need of business. The situation has improved for them as a result of declines in raw silk, but the market still is far from satisfactory, preference being given to full-fashioned. However, latch needle silk stockings at a dollar a pair make an appeal, and manufacturers not burdened with high overhead and content with a narrow margin of profit should fare well in volume for the Summer and Fall seasons.

There came renewal of interest last month in latch needle hosiery of silk plaited on rayon and sold under well-known brands. Made of three-strand silk on one thread of 150-denier, this stocking last year had a wide open market, which suffered not a little by cheapening by some mills in order to meet jobber's price notions. The effect was to breed distrust of silk and rayon among jobbers aiming to maintain former standards. Buyers themselves were unable, in instances, to discriminate between two and three strands of silk in combination, according to their own admissions. To make matters worse for the standard dollar stocking of combination yarn, it was put on sale in a few stores at 85 cents, which strengthened the suspicion of jobbers that cheapening was being resorted to. Selling to jobbers formerly at $6.35-50 a dozen, the silk-and-rayon came out last month at less than $6, in sharp competition.

Spring needle silk of fine gauge is attractive, especially to chain and department stores, which make it a leader in the dollar price bracket. But it offers small possibility for dealers buying from jobbers. Spring needle chiffons have been in strong call, as indicated by the sales of a manufacturer employing a battery of 75 machines and selling the output of full-time operating. The same mill operates 12 full-fashioned machines of 42-gauge, which are engaged exclusively on silk-to-top chiffons selling in retail stores at $1.95 a pair.

Quotations on spring needle silk show considerable variation, some few small mills getting $8.50 a dozen from jobbers, while a large establishment is selling at $8.25, the two quotations applying to stockings of like gauge and length of boot. Some mills are sold well ahead and employing two shifts of operatives.

The one-time popular price for hosiery seems to be a matter of the past, as disclosed in the tags seen in window displays of neighboring shops and on the same counter in one store. For example, a service weight, circular knit silk boot stocking from a mill in Chattanooga, Tenn., is priced $1.50 a pair, while on an adjoining counter is a full-fashioned of medium weight at $1.25 regular, and a silk-and-rayon full-fashioned at $1.15. The variations often are confusing to shoppers seeking to make price comparisons.

Women's plain mercerized hosiery, while holding its place as a service indoor stocking, seems to be losing ground in the metropolitan shops, and with the virtual passing of the pineapple and drop-stitch, along with the erstwhile popular R I, less and less mercerized yarn is being used in hosiery except for the foot and top, and consumption will decrease if the all-over silk or 4-inch hem continue to gain in favor. A recent showing by a mill in Reading, Pa., is a misses' silk-to-top stocking, to retail at a dollar a pair. Its originator says "We want to make it unnecessary for the Miss to borrow Mama's stockings for dress-up."

Considerable speculation is being indulged in concerning the future for all-rayon boot hosiery. It has not been in good demand, apparently. At any rate, manufacturers who have specialized in rayon goods are in need of orders for immediate delivery, or were to the latter end of March, although, they said, they had reason to believe there was a fair volume of business just around the corner, and the corner not far away. There are mills with orders for rayon hosiery to be shipped out in June and later, but as there were visions of a reduction in the price of the fiber, they said the goods would not be made up until it became absolutely necessary to put them in process for making deliveries on schedule.

What is the situation in most mills making this class of hosiery doubtless is typified by that in a factory whose executive said, "We do not own much rayon, and will buy none so long as we do not feel safe in putting it into hosiery, for we know from experience that if the price were to decline as little as 25 cents a pound the unfilled orders on our books would be worthless, unless we made a price adjustment. We have plenty of future business," this manufacturer added, "but very little for immediate, and are operating the plant at less than 50 per cent capacity."

A good future for high-grade rayon hose to retail at a half dollar is predicted by various interests. The bulk of the business in this stocking, it is thought, will be taken for the summer months, a period for which jobbers are making commitments on a very conservative basis. As the matter presents itself, it appears the trade views rayon as the more speculative of the several fibers entering largely into hosiery.

While, according to reports from representative manufacturers, there has been a letdown in new business in juvenile hosiery, distribution is on a large scale. Jobbers are taking in misses' sports hose and infants' socks very freely, and for a time there was a steady flow of good sized repeat orders. Leading distributors are believed to have covered for more than 80 per cent of their needs as measured by what they used in the preceding year. Some few mills have sold their production to the middle of May

DIXIE MERCERIZING COMPANY

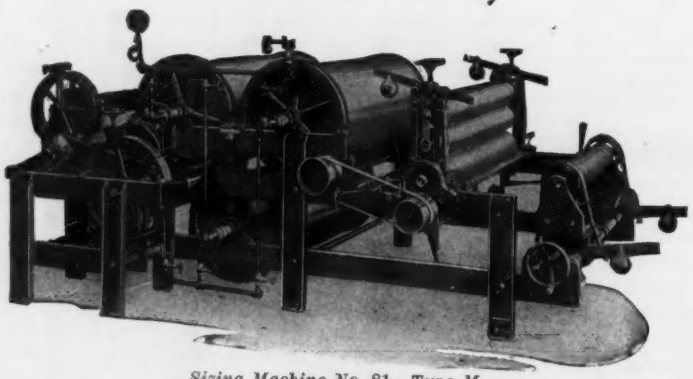
SPINNERS AND PROCESSORS
AIR DRIED

Mercerized Yarns

CHATTANOOGA, TENNESSEE

Cameron & Pfingst, 308 Chestnut St., Philadelphia, Pa.
Acme Sales Co., 906 Johnston Bldg., Charlotte, N. C.
Cameron & Pfingst, Amer. Casualty Bldg., Reading, Pa.
Slater & Company, 53 Younge St., Toronto, Ont., Can.
J. V. Calhoun, Sta. "C," P. O. Box 1566, Los Angeles, Cal.

Sizing Artificial Silk Warps No Longer A Worry



Sizing Machine No. 81—Type M

JOHNSON SIZING MACHINES

UNLESS specially adapted to handle artificial silk, sizing machines fail to meet the conditions created by this particular product.

The Johnson Sizing Machine is in every way suited to handle artificial and spun silk warps. The large drying cylinders, the regulated even tension, the carefully adjusted quetsch, improved warp take-up, and many other features make it so.

This machine has been proven the fastest Sizing Machine made while its success in increasing production in weaving is remarkable. Our claims are not "manufacturer's statements" but plain facts based on actual operation.

Write for information.

Chas. B. Johnson
Mfg. Silk Finishing Machinery
10 Ramapo Ave. Paterson, N. J.

Southern Representative:
G. G. SLAUGHTER,
Johnston Bldg., Charlotte, N. C.

RAYON SIZING FOR WARP

SKEIN OR SLASHER

ALL sizings bind the fibres, but if you wish to obtain in your Warp Ends, the two most essential characteristics, *Elasticity and Flexibility, you must use*

WASOL M-21

DISCHARGES IN PLAIN WATER

Neutrasol Products Company
41 Park Row New York

and declined hurry-up orders. From this it is deduced there will be some late business offered and that some of it cannot be advantageously placed. The lull in new orders gave few manufacturers the slightest concern. If retailers are not well provided for or a heavy early Spring business develops, some mills will be operating for the current season even after opening their lines for the next, as was the case in 1925.

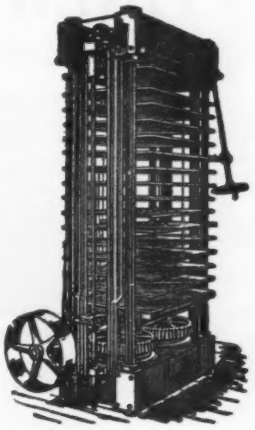
Novelty half-hose stands out as the more active and more precarious item in all hosiery lines. It is a profitable proposition for some manufacturers and an unsatisfactory one for others, notably in the smaller class of establishments. The situation is thus outlined by the management of a mill selling to retailers and two that sell to jobbers, one operating 175 machines and the other employing 120. At the direct-to-retailer mill it was stated: "We bring out a new pattern every month. Dealers buy about as they sell, always holding back to the last moment, to be sure of getting the latest. Demand is not quite so strong as it was two months ago."

The mill with 120 machines usually is part idle, and operates alternate periods of three to five days, making up nothing for stock and receiving only small orders, which, however, come in with fair regularity. Jobbers place orders for a line of samples, and some time must elapse before they decide which of the patterns they will want, from which it is inferred that they sell in advance of buying. All of the lines retail at a half dollar, while most of those of the direct-to-retailer mill fetch from 75 cents to a dollar, the latter being in minority call.

The manufacturer with 175 machines is operating steadily to capacity and shipping out production, at times falling in arrears with deliveries. All of the lines of this mill are in the half dollar bracket, and the management thus far has been able to gauge jobber needs to a nicety, making a cleanup of given patterns before jobbers have shown samples of new ones, neither mill nor distributor having any dead stock, a policy which, it may be said in passing, is in large measure the secret of successfully operating in novelty hose.

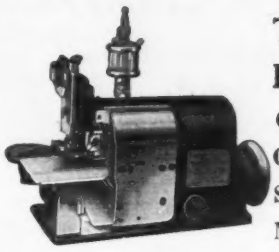
All interests from manufacturer to retailer are enthusiastic over novelty half-hose for the present, but there is much speculation as to how long the fad may last; whether fancy stripes and plaids may meet the fate of the one-time drop-stitch with horizontal stripes. Gaudy patterns wane as fast as they become commonplace. Neat stripes and a restriction on color combinations are the better guess for a long run. The collegiate is profitable so long as it lasts, but usually it has a short existence. Always there will be the silk sock in plain colors as a standby and there is enough of it going into distribution to serve as a caution against going too strong on fancies.

Production of silk half-hose declined steadily month by month last year, according to the most trustworthy statistics available, and although these figures are not wholly conclusive, there was a substantial gain in January over December, but not enough to indicate a trend of silk for the coming season. It would appear that silk for Summer is no less problematical than wool hose for the Winter of 1926-27. If wool shall be worn, it is believed it will be in patterns, which would supply encouragement for the believers in another light-weight pattern season following this year.



RELIANCE
Hot Plate Screw Press
FOR
Hosiery and Underwear
Write for Catalog and Prices
Reliance Machine Works
FRANKFORD, PHILA.

MERROWING



THE MERROW
HIGH SPEED
OVERSEAMING,
OVEREDGING AND
SHELL STITCH
MACHINES

FOR FINISHING ALL KINDS OF KNITTED AND WOVEN FABRICS.

MERROW
Reg. Trade Mark
FOR QUALITY AND QUANTITY PRODUCTION AT LOW OPERATING COST
— MERROWISE —

THE MERROW MACHINE CO.
ESTABLISHED 1838
16 LAUREL ST. HARTFORD, CONN., U. S. A.

CONTINENTAL DRI TRANSFERS

The standard in quality—Fairest in price—No Dry transfer could do more.

CONTINENTAL TRADEMARK CO.

KNOXVILLE, TENN. 151 EAST 126th ST.—NEW YORK, N. Y. OSAKA, JAPAN

Weimar Bros.

Phone Connections

Works: 2046-48 Amber Street
PHILADELPHIA, PA.

MANUFACTURERS OF

Cotton Mercerized Tapes, Spool Tapes, Bindings and Narrow Fabrics for Underwear and other Trades.

VISCOSE RAYON YARNS

Regular Yarns from 150 up to 1800 denier

Regular and Special Twists for Weavers, Knitters and Braiders

Spot and Future Deliveries

Spinnstofffabrik Zehlendorf

G. M. B. H. BERLIN, GERMANY

Sole Agents and Distributors for the U. S. A.

NEUBURGER & CO., Inc.

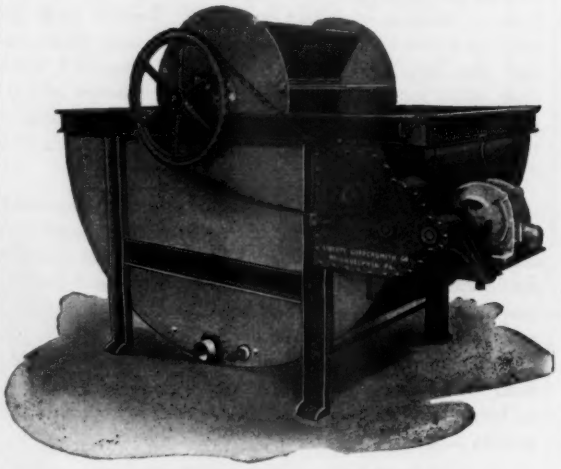
Established 1866

160 Fifth Avenue New York

LIBERTY

Monel Metal Dyeing Machinery

Skein Tanks, Pails, Dippers, Etc.



MONEL METAL PADDLE MACHINE MOTOR DRIVE

Liberty Coppersmithing Company

1708-16 N. HOWARD ST., PHILADELPHIA, PA.

Repair Work a Specialty.

FOR BETTER SIZING

USE

ELASTIC SLASHER SIZE

MORE ECONOMICAL THAN OTHER STARCHES

SPIER, SIMMONS & CO., Inc.

474-478 GREENWICH ST., NEW YORK
SOUTHERN OFFICE: 250 IVY STREET, ATLANTA, GA.

BOSTON PHILADELPHIA TORONTO

Underwear.

A between-seasons situation prevails in the primary markets for Winter underwear, while in light weights there is a fair degree of activity as reflected in demand for rush deliveries against old and repeat orders. As jobbers as a whole operated fairly liberally in men's heavy weight cotton ribs following the formal opening, and since then cotton declined from the level at the time prices for the season were named, the market for some weeks has been comparatively quiet, although underwear values had not been disturbed by the slight downward movement in the raw fiber. There really was little incentive for jobbers to place initial orders, and, obviously, repeats were, as a general proposal, hardly to be thought of, although, it is stated, some of the southern mills booked a smattering of duplicate business in March, from jobbers who seem to have disposed of their early contracts, and there is understood to have been some detailing for initial deliveries. This in itself was viewed as an encouraging phase of the winter underwear market situation.

Retailers' orders this year for winter weights will be placed later than usual, is the fear of the jobbers, and therefore, it is reasoned, the bulk of the duplicate business seems likely to be withheld so long that again mills will be in straits when it comes to getting off shipments in the early winter months. It seems quite certain no underwear, not excepting staples among staples, will be made up for stock, and that when late buyers come to market they will have to be content with shipments in the order in which business is accepted.

An Ohio mill is one of the several which will accept no new heavy weight underwear accounts, so well is it sold ahead. As was explained by the management, the mill is not sold up for the season, but must hold some production in reserve for taking care of the repeat orders of regular customers, the estimate of the duplicates being predicated on the proportion of initial and repeats last year. The mill to the middle of March had sold more of both winter and summer weights than to the corresponding date of 1925. In fact, the management say, the orders for the current season are about all the mill will be able to handle, making allowance for less than the 1925 duplicate business.

Fleeced cotton underwear mills found it expedient several weeks ago to begin measuring contracts with maximum output. Fewer mills now are making this type of underwear, and it seems consumption has declined less than has production. Manufacturers say they believe a few mills will have sold up for the season before a duplicate business is offered. Recalling the shifty attitude of one or more manufacturers at the opening, the season thus far has progressed very satisfactorily for all.

Jobber complaint is heard of late deliveries of cotton ribbed summer underwear from some of the New York State mills, and a few manufacturers of balbriggans are not keeping shipments up to schedule. In view of jobber attitude for some time last year following the opening, manufacturers did not push production. Recently repeat orders began piling up, and in a number of instances it was necesasry to return orders for confirmation on later than specified deliveries.

If the reports of retailer tardiness in making commitments in Summer knitted underwear are approximately correct, there is a busy month or two ahead of manufacturers of certain popular lines, for, while jobbers are buying in fair volume, it seems quite certain they are far

WICACO

SCREW & MACHINE WORKS, Inc.

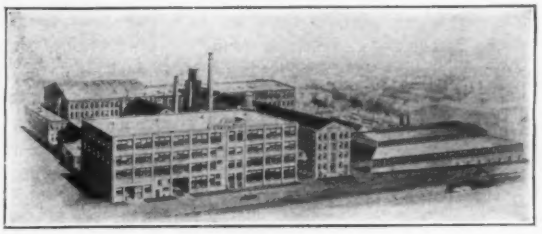
Stenton Avenue and Louden Street
Wayne Junction P. & R. R. R.
PHILADELPHIA

Pioneer Manufacturers of
Machine Parts and Accessories for

RAYON

EQUIPMENT

Established 1868
59 Years of Continuous Production



Home of The Eastwood Company.

Machinery for RAYON, Hard and Soft Silk, Cotton and Similar fine yarns.

Winders — New spiral gear or variable speed drive

Warpers — All sizes and for all purposes

MOTOR OR BELT DRIVEN

Benjamin Eastwood Co.
Office and Works Paterson, N. J.

Correspondence Solicited

from having provided for requirements on the basis of 1925 distribution. Of course, there is to be taken into consideration the status of nainsook and similar union suits and drawers.

Certain branded lines of nainsook suits are already in scant supply for nearby shipment. It is stated by jobbers that a mill in Winston-Salem, N. C., is chary about promising deliveries against new orders inside of three to six weeks, and that at least two others have no stock from which to ship out spot goods. From these and like reports, it is inferred that jobber sales of nainsooks are running ahead of their expectations. How far these will cut into the business yet to be placed for ribs and bals is problematical. Manufacturers of ribs in particular seem very sure of a big season, and there are jobers who make the prediction wanted knitted underwear for average Summer deliveries will be scarce. A guess that will probably be found to have been not far wrong is that of a great deal of business in knitted lines for men will be offered. How far manufacturers will go in putting goods in stock for a retailer emergency will depend on the volume of their duplicate business and the deliveries specified.

Upstate Pennsylvania manufacturers of women's cotton union suits, vests and drawers are, apparently, supplied with business to keep plants engaged to about the end of Spring. Several of the Schuylkill Valley mills have been, at times, operating overtime in the completion of initial orders, and it appears they are in no distress for want of repeat orders. Plant operation appears to be at a better stage than during the few years when there existed the fear rayon underwear would crowd combed cotton lines off the map. There is, however, a spotty situation, for there are mills, depending on their lines, that could accomodate more business and are runnning only on orders.

It is doubted in the trade whether all-rayon underthings are making the headway that was predicted for them. It is showing better since the disappearance of small establishments making price instead of merit their objective, and the fact it is being marketed by such large direct-to-retailer mills as the Kayser and Munsingwear serves to inspire confidence in the lustrous fabric. But rayon as a fabric for underwear cannot be said to be disturbing manufacturers of cotton and silk lines.

Sweaters.

But for activity in bathing suits, the knitted outerwear industry would, it is believed, be less than 50 per cent engaged. Predicated on March distribution of bathing suits there is warrant for forecasting a big season. Several of the Philadelphia manufacturers found it necessary to operate plants overtime, one in particular employing two 9-hour shifts of operatives. This was an exception and stood out conspicuously with the stage of operations in most of the sweater mills where an average of half time operation served all purposes.

In sweaters, there is a fair amount of business in sports and golf coats, the latter with stockings to match. Novelties for Spring and Summer are moving out in a conservative way, while trading in staples has been in very light volume. No one, from maker to retailer, seems to know just what to put in stock. The matter will have to be disposed of very soon, and manufacturers feel that just as soon as distributors get their bearings there will be a radical improvement all along the line. But one safe deduction is that manufacturers will not be able to market a normal year's production, as the really big, dependable business will be placed too late to make possible deliveries within the distribution period. The worsted yarn markets are in favor of sweater manufacturers, but mills cannot buck jobber determination to defer major commitments to the eleventh hour.

Plans are being made by the Chattanooga Yarn Association, Chattanooga, Tenn., for the first annual golf tournament conducted by the organization. This will be held for the knitting mill men of the South, and the Association has put up a trophy to be known as the Chattanooga Yarn Association trophy which will be the prize of the tournament and become the permanent possession of the winner of any three tournaments. The first tournament will take place in Chattanooga on April 29th and 30th, and announcements and invitations have been mailed out. The activity of the two days will comprise sight-seeing trips for the out of town guests, golf both afternoons and a banquet on the night of the 30th.

The Association was formed last Fall, and is composed of various individuals who are local representatives of yarn manufacturers and brokerage concerns. The purpose of the organization is to further the friendly relationship existing between the members, and others in allied textile lines. The officers are: Tom Moore, of National Yarn & Processing Co., president; W. S. Lawson, Standard-Coosa-Thatcher Co., vice-president; and R. H. Griffith, Harding, Tilton & Co., secretary-treasurer. Other members are H. T. Cosby, C. D. Gott, C. A. Byles, French Campbell, Jr., Mr. Kimball of Dixie Mercerizing Co., Mr. Belk of Johnston Mills Co., A. S. Johnson, R. D. McDonald and Dudley Bryan.

The southern office of the Quaker City Chemical Co., of Philadelphia, is now located at 1210 The General Building, Knoxville, Tenn., under the supervision of W. S. McNab.

Fidelity Machine Co., 3908-18 Frankford Avenue, Philadelphia, Pa., have announced a new machine, known as the Fidelity multi-design true rib machine, which offers a step further in advance of the regular multi-design machine announced recently. The multi-design true rib machine knits up to 90 colors in a vertical direction and four colors in a horizontal direction, giving a practically unlimited variation of color combinations and patterns. The fabric, it is pointed out, is true rib and duplicates the fabric produced up to the present only on the foreign Jacquard flat machines. It is understood the 1926-1927 capacity production on this type is already disposed of by the company.

Under the name National Diazine Black VJ Conc., the National Aniline & Chemical Co., Inc., has brought out a new developed black that resembles the well-known Diazine Black V in its general characteristics, at the same time offering certain advantages over the latter. This new product is particularly adapted for dyeing half-silk hosiery, as well as for the production of fine, bloomy blacks on plain and mercerized cotton, real silk and the various kinds of artificial silk, with the exception of acetate silk.